UNITED STATES DEPARTMENT OF AGRICULTURE
Radio Service
OFFICE OF INFORMATION

YOUR FARM REPORTER AT WASHINGTON Friday, November 1, 1929

NOT FOR PUBLICATION

Speaking Time: 9 Minutes.

Dairy Interview No. 7: A FULL DINNER PAIL FOR THE DAIRY COW

ANNOUNCEMENT: YOUR FARM REPORTER says the title of his talk today is "A Full Dinner Pail for the Dairy Cow." He's been talking with T. E. Woodward, who has charge of all the dairy feeding and management work the United States Department of Agriculture farm at Beltsville, Md. From this interview with Mr. Woodward he brings you the latest available information on feeding the dairy cow for highest profits. And here he is!

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Mr. Woodward gave me a sort of new slant on the whole problem of feeding dairy cows. Here's the way he outlined it to me:

First, the dairy cow constitutes the dairymen's market for his feed. A farmer who raises hogs, beef cattle, wheat or potatoes spends a lot of time figuring on what market will pay the highest price for his product. If Buyer Jones offers him one cent more per pound for his hogs, or a few cents more per bushel for his wheat, he sells to him.

In the same way the dairy farmer has to figure which of his cows return the highest price for their feed. If Blacky returns $3 for each dollar's worth of feed eaten he feeds her better and tries to build up an entire herd like her. If Susie has had just as good a chance as Blacky and gives only $1 in return for a dollar's worth of feed, it is good economics to sell her and all of her kind.

Some cows are born low producers. They will be poor markets for feed as long as they are in the herd, regardless of the quantity and kind of feed given them. Others, however, are low producers not because they are poorly bred and incapable, but because they are not fed enough and aren't given the right kind of feed. This is the point that Mr. Woodward emphasized. Give the cows a chance, he says. Then if they don't produce economically sell them to the butcher. But first, be sure that you HAVE given them a fair chance.

Thus, we start out with the two essentials for profitable dairy feeding:

First, that cows be capable. That is, that they have inherited the ability to turn a large amount of feed into a large amount of milk.

Second, that they be given PLENTY of feed, such as good hay, silage, pasture and grain.

Now, just how much is "plenty" of feed? Mr. Woodward approached the answer to that question along this line:

The mature cow normally utilizes feed for two purposes: First, body maintenance. And second, milk production. Of course, if she gets more feed than she can utilize for both maintenance and milk production there is a third use also. She converts the surplus into body fat.

Here is the difference between the well-fed and the poorly-fed cow. Both get enough feed for body maintenance because that always comes first. But the poorly fed cow doesn't have enough feed left over for milk production. That is, not enough to allow her to produce the full amount of milk and butterfat she is actually capable of producing.

Of course there is such a thing as over-feeding. It isn't economical to convert high-priced feed into body fat. The idea is to feed right up to maximum production or perhaps to the point where the cow begins to lay on body fat, but no further.

This naturally gives rise to the question: "How are you going to do it?" How are you going to know just how much toefeed a cow so that she will produce at maximum capacity and still won't be wasting any feed by storing it away as body fat?

"Well," Mr. Woodward responded, "the simplest guide to the proper amount to feed is condition of the cows. If they are getting thin, give them more feed. If they're getting fat, reduce the feed."

"But nowadays the relation of total nutrients to quantity and quality of milk as well as to size of the cow has been fairly well determined. We have developed standards which tell us pretty accurately the amount of nutrients that should be supplied to cows of various sizes yielding milk of different quantities and different degrees of richness.

"First, let me say this. Proper dairy practice demands that the fullest possible use be made of roughage. Cows should be fed to the limit on roughage. Supply only enough grain to meet the requirements of the individual cow for nutrients.

"Out at the Beltsville station we've found that the average Jersey cow will eat enough roughage-- that is, corn silage and a good grade of alfalfa hay-- to maintain her body weight and support a milk flow of 10 pounds per day. The average Holstein will eat enough for maintenance and 16 to 18 pounds of milk. Therefore, it seems logical to provide grain in such quantities as are necessary to furnish nutrients sufficient for all milk produced above those figures-- 10 pounds for Jerseys and 16 to 18 pounds for Holsteins.

"Now," he continued," one pound of grain mixture, of which bran or ground oats comprise one-half the weight, will contain nutrients in such amounts that 55 one-hundredths to six-tenths of a pound will support a production of one pound of Jersey milk. Four-tenths to 45 one-hundredths pound are adequate to produce one pound of Holstein milk."

I asked if this formula were practical for application by the average dairy farmer.

He answered "Certainly. It would be impracticable to weigh the hay, of course. But here's the system I'd suggest:

"Feed each cow about three pounds of silage for each 100 pounds live weight. For example, a cow weighing 800 pounds would receive 24 pounds silage, one weighing 1200 pounds would get 36 pounds. Then, give all the cows all the good legume hay they will eat twice a day without expecting them to eat all of the course stems or weeds.

"Now, about grain. To Jersey cows yielding 10 pounds or less of milk give no grain. But, for every pound over 10 give six-tenths of a pound of grain. That is, if the milk tests over 5 per cent. If it tests 5 per cent or less give 55 hundredths of a pound of grain. A Jersey giving 20 pounds of milk would receive 5½ or 6 pounds of grain; one giving 30 pounds of milk 11 or 12 pounds. And so on. As to Holsteins give no grain to those yielding 16 pounds of milk or less. For every pound over 16, though, give four-tenths of a pound of grain if the milk tests 3.5 per cent or less and 45 one-hundredths pounds if it tests more. This means that a Holstein yielding 30 pounds of milk would receive 5.6 to 6.3 pounds grain, while one giving 40 pounds would receive 9.6 pounds to 6.3 pounds."

Experiments with Guernseys and Ayrshires haven't been carried on so extensively. But Mr. Woodward said that apparently Guernseys need about one-half or 55 hundredths of a pound of grain for each pound of milked produced above 12. And Ayrshires 45 hundredths of a pound for each pound of milk above 14.

He emphasized here that this method calls for a good quality of legume hay. If the hay is not a legume, or if it is of poor quality, the cows will not eat so much of it. And that means that they will need more grain. In such a case, he said, the feeder should be guided by the condition of his cows.

"In fact," he went on," it's best to take condition of your cows as a guide to some extent in any system of feeding. For best results, all cows should be kept in a fair state of flesh.

"The heavier a cow is fed the more milk she will produce. However, greater returns per unit of food are obtained when the excess of feed is slight than when it is large. Unquestionably all cows 4 to 6 weeks after calving need at least enough feed to maintain their body weights. Other-

wise the production of milk declines rapidly. It appears natural also for a cow to make a slow but steady gain in weight from this time until she calves again. This gain must be made in order to bring the cow to the same condition she was in the previous year. So it is thought best to feed cows enough to allow some of this gain to be made while milking rather than trying to accomplish it all during the dry period. Such feeding undoubtedly results in more milk than if the weights are kept stationary."

"To summarize the whole question," Mr. Woodward wound up," I'd put it like this: A good dairy cow is a market for feed. The better the cow the better the market. And the more feed that can be marketed through good dairy cows the greater the income from the enterprise. From the economic standpoint, not only good cows but good feed is necessary. And to make the greatest net income that feed must be cheap.

Finally, therefore I think that every dairy farmer should raise as much as possible of his cow feed, especially the roughage, and it should be of the best possible quality. On the other hand, if a good quality hay or grain feed cannot be raised on the farm, it may be more economical to buy the kind of feed that good cows need to produce milk abundantly. Often a loss may be turned into a profit by feeding a better quality of feed without increasing the quantity."

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ANNOUNCEMENT: YOUR FARM REPORTER has just concluded his seventh week on the air with a talk on feeding dairy cattle. The information was supplied by Mr. T.E. Woodward, who is in charge of Uncle Sam's dairy cattle feeding experiments on the government farm at Beltsville, Md. If you want further information write to YOUR FARM REPORTER at Station_____ or at the Department of Agriculture. He'll be glad to get it for you.

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UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

OFFICE OF INFORMATION

YOUR FARM REPORTER AT WASHINGTON Monday, November 4, 1929

NOT FOR PUBLICATION

Speaking Time: 9 Minutes

HOW LIVESTOCK GRADE STANDARDS HELP STOCKMEN

OPENING ANNOUNCEMENT: Last Monday your Farm Reporter told you how to improve the calf crop. Today he is going to tell you how livestock grade standards help stockmen. First, he will tell you why it was necessary to set up these standards; second, what the standards are; and finally, how they are used by stockmen. Are you ready, Mr. Reporter?

--ooOoo--

I am. I'm not only ready, but I have my watch here which measures time in standardized units and will help me keep my talk within the allotted period.

You know, folks, we are traveling so much, and living so fast in this day and age that it is necessary to have standards with which to measure almost everything. The pound is the standard for weight, and a pound of sugar in Seattle is the same as a pound in Miami. The foot is the standard for lineal measure, and a foot of lumber in Boston is the same as a foot of lumber in Mexico City. The hour is a standard unit for measuring time. 'A dozen eggs' is standard the country over.

A great deal of time and effort have been spent in working out the many standards in use today. Some of them came about easily and naturally, others were more difficult to arrive at, and some are still in the process of being worked out.

We were up against a real problem when it came to working out grade standards for livestock -- cattle, horses, hogs, sheep and goats. The problem was more serious because there was a confusion of tongues, and a lack of understanding between producer and consumer, and the different branches of the livestock and meat industries. In olden days a housewife went into the store and said, 'I want a piece of boiling meat,' or 'I want a 50¢ roast of beef.' She had a big cooking pot, plenty of room and time and didn't care what grade of animal produced the meat and cared little from what part of the animal it came. Things are different today. The small apartment housekeeper goes to the butcher shop and demands chops, steaks and cutlets, and she wants them of a certain

size, weight and grade. We have established standards for all these things and now we damand that the requirements of those standards be met when we make our purchases. Meat is no longer just beef, pork or mutton.

A packer in Philadelphia wires an Indianapolis hog salesman to ship him a carload of "lightweight" hogs. Hogs of that sort should weigh from 160 to 200 pounds each, and the Indianapolis hog salesman must know that in order to give the packer what he wants. Formerly we just sold hogs, but today we sell them by classes, weights and grades. Why? Because the consumer wants chops, hams and bacon of a certain size, weight and quality. Consequently the hogs bring the producer more money when assorted and graded according to uniform standards so they will produce the cuts the consumer requires.

Prime is the top grade of steers. A prime steer in Chicago is one that has been fed liberal quantities of corn or other concentrates and is fat and ready for slaughter. Prime grade steers are not uncommon in the Corn Belt because corn is plentiful and that is the leading feed used in the production of the better grades of beef. Drop down south and southwest and hay, grass and browse largely take the place of corn as feed for livestock.

A stockman down in Louisiana was offered $10.50 per hundred for a carload of Prime steers at his home market. Chicago offered $13.00 per hundred for Prime steers at the same time. He shipped to Chicago and received $10 per hundred for his steers. When he complained he was told that his steers were not Prime at all but medium and rather poor at that. He got all his steers were worth on the Chicago market, but he lost 50 cents per hundred plus the extra freight and shrink by not selling at home. Why? Because he was not familiar with the Chicago standard for a Prime grade steer. A Prime beef steer ought to be a Prime beef steer in New Orleans, San Francisco, Chicago or Baltimore, and the standard for a Prime steer should be clearly understood by every stockman in the country. Likewise the standard for Choice grade, Good grade and all the others should be understood.

There is a popular demand for a certain weight hog in New York City. As a result of this the local name "Yorker" sprang up many years ago. Hog salesmen in the territory which supplies New York City know exactly what a "Yorker" or "York" hog is, but the name is not known nor understood in other sections.

In olden days the stockman usually went to market with his livestock. Today conditions are such that usually it is unnecessary and frequently unprofitable for the producer to do so. The radio, telegraph, and telephone, and above all a trade language which is rapidly becoming standardized make it possible for the stockman to keep more promptly and accurately posted on market conditions than many men who are actually on the market. Formerly, each livestock market was largely a local institution and served a certain section; but today every market is a possible competitor of every other market in the country. Each

market reaches out over a wide area for supplies and pushes sales far beyond the local territory.

As long as Bob Smith produced livestock and sold it to his local market there was no great need for universal standards. He understood the home market and it understood him, regardless of names or terms used. When transportation facilities increased and all markets began to publish quotations in newspapers by wire and over the radio, our problem started. Stockmen who had been used to local markets and local market terms saw the chance to sell for more money on other markets, and they took the venture. Many of these ventures were financial disasters because there was no universal grade standards and no universal trade language known and understood throughout the country.

Seeing this situation, and knowing that stockmen and in fact the entire industry was actually suffering financially as a result of it, the United States Bureau of Agricultural Economics set about to remedy the matter. In 1916 work was started in an effort to standardize market classes and grades of livestock. Mr. C. E. Gibbons, a livestock specialist, was charged with working out many of these standards and developing a trade language which could be used at all markets. Much of the information I have just given you came from Mr. Gibbons. I interviewed him in order that you might have the latest information on this subject of livestock standards. After warming up to the subject I started asking questions. My first,

"What is livestock standardization?"

"Standardization is a mark of progress," he replied. "It serves two purposes--

1. It enables the stockman to tell prospective purchasers what he has to sell in a standard language so that it is understood throughout the country, and

2. It enables the buyer, by using the same language, to tell what he wants.

All kinds of livestock formerly were bought on personal inspection. Today many transactions are made by telegraph, telephone, or some other form of rapid communication, and frequently the seller and buyer never meet each other. To accomplish this it is necessary to have standards with which to measure all those features or characteristics which make one steer or hog differant from another steer or hog, which makes one animal more desirable for a certain purpose than another animal, or, in other words, those things which make one bring more money than the other. And then it is necessary to have a standardized trade language with which to describe those things so that everyone can understand everyone else when such matters are being discussed.

"To help solve this problem we worked out Department Bulletin No. 1360, "Market Classes and Grades of Livestock". This provides a

brief outline of the plan followed in working out standards and a complete schedule of all the groups into which livestock is sorted in the process of marketing. These matters are presented in such a clear, concise manner as to be easily understood by farmer, stockman, commission man or packer."

"Please illustrate that", I said.

"Well, this is the way it works," he said as he pointed to a big chart on the wall. "You see first, all livestock are assorted according to kind -- cattle, hogs, sheep, goats, and etc. Next, each kind is divided into classes -- steers, cows, bulls, stags, etc. The class is divided into sub-classes as feeders, stockers, milkers, etc. Another classification is on age -- yearling, two years old and over. According to weight, as lightweight, mediumweight and heavyweight. Now comes the last segregation which is grade. Right here is where money frequently is made or lost, and every producer should understand the difference between Prime, Choice, Good, Medium, Common or Cull. When the standards for these grades and the meaning of these grade names are clearly understood then there will be little occasion for disputes. If a Texas ranchman has Medium grade cattle and knows they are Medium and sells them in Kansas City for the Medium grade price, he is satisfied. If he has Medium grade cattle but thinks he has Choice or Prime grade and they sell on the market as Medium grade, then he is disappointed and feels he has been cheated."

At this point I interrupted Mr. Gibbons by asking, "How does this government standardization help livestock producers?"

"First, he said, "it enables the buyer to get what he wants and he will always pay a better price for just what he wants than for something he doesn't want or is rather indifferent about.

Second, it makes possible an accurate determination on values.

Third, it enables the producer to sell his livestock on its merits and hence to get the "high dollar."

Fourth, it makes possible intelligent market reporting by providing standardized names and grades which are understood by all interested parties.

Fifth, it eliminates disputes."

Mr. Gibbons gave me a great deal more information on this subject of standard market classes and grades for livestock, but my time is up so I will have to sign off. In closing let me urge you to get Department Bulletin No. 1360 "Market Classes and Grades of Livestock."

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CLOSING ANNOUNCEMENT: You have just listened to your Farm Reporter tell about standardized market classes and grades of livestock. For further information on this subject, write this station for Department Bulletin No. 1360, "Market Classes and Grades of Livestock." This bulletin is 'chock' full of valuable information for every livestock producer. Tune in again tomorrow for another Farm Reporter talk. They come to you through the cooperation of the United States Department of Agriculture and Station_____.

UNITED STATES DEPARTMENT OF AGRICULTURE
Radio Service
OFFICE OF INFORMATION

YOUR FARM REPORTER AT WASHINGTON. Tuesday, November 5, 1929

Crops and Soils Interview No. 8: Make Sure of Your Potato Seed.

ANNOUNCEMENT: We sent our Farm Reporter at Washington word to look up a potato expert and report to us what we can do to make sure of our potato seed. He is ready now to tell us what he found out at the United States Department of Agriculture. Well, Mr. Reporter -----

--ooOoo--

Dr. William Stuart, of the Office of Horticultural Crops and Diseases, of the United States Department of Agriculture, is the potato expert I saw. He told me to warn all you potato growers who haven't yet bought your seed, to lose no time doing it.

This seed question is something which ought to have been attended to during the growing season. The only thing you can do now, Dr. Stuart said, is to buy certified seed. And if you don't do that promptly, you may not be able to do it at all. There may not be enough certified seed to go around this year. You see, there was a smaller acreage certified this year. Last year, a lot of certified seed potatoes were not sold. As a result, the acreage entered for certification decreased this season.

Of course, we all recognize it is important to select as seed potatoes those which show as little mechanical injury as possible. None with wounded tissues or affected with dry rot fungi should be used. Most seed certifying agencies require that the seed stock shall be graded in accordance with U. S. Grade No. 1. That guarantees the buyer a minimum amount of mechanical injury.

Another thing Dr. Stuart said we should be careful about is storage of the seed potatoes. The potatoes should be stored so as to prevent undue germination of the seed before they are planted.

I asked him about what temperature was best for potato seed in storage, and he said a temperature of from 36 to 40 degrees is low enough. Forty is low enough, if the seed is to be planted early, say late in January or early in February. And in order to prevent high transpiration losses, there should be a reasonably high humidity in the storage house.

Then we switched back to this question of certified seed. I was a bit skeptical at first, but he explained that in buying state certified seed potatoes, the purchaser has a guarantee that the seed does not contain an undue amount of diseased potatoes, with such diseases as mosaic, leaf roll, and spindle tuber, and other types of virus diseases.

Those diseases, Dr. Stuart said, cause a very material reduction in the yield. Yet you can't recognize those diseases in the tubers themselves.

That expression "A very material reduction in the yield" didn't mean much to me, so I insisted on knowing just how the yields from certified and uncertified seed compare. He cited me the figures from 11,000 tests, which showed differences of from 25 to 100 bushels to the acre in favor of the yields from certified seed. On the average there is a difference of about 50 bushels to the acre. That is, on the average growers get 50 more bushels to the acre from a field planted with certified seed than from one planted with uncertified seed.

"Are there no good seed potatoes except certified seed?" I asked.

"Certainly, there is a good deal of good seed not certified," replied Dr. Stuart, "the trouble is you don't know who has it. Your only insurance against poor seed is to buy certified seed." Then he went on to point out that diseases among potatoes have increased in recent years; so it is becoming more and more important to start with as nearly disease free seed as possible.

The main thing about certified seed is the guarantee you get with it. Such diseases as mosaic, leaf roll, and other virus diseases that cut down yields can only be detected in the plants growing in the field. In the case of certified seed, the seed certificate or tag is evidence that the field in which the seed was grown has been inspected twice during the growing season by State inspectors, and found to be almost free from detectable diseases.

To pass the first inspection, the crop in the field must not show more than a very small percent of diseased plants. Any diseased plants found by the inspector are supposed to be removed before the second inspection. The percentage of diseased plants at the second inspection must not be more than a certain specified percentage; in most cases about half of what is allowed on the first inspection. The second inspection also results in the detection of any diseases which show up late in the growing season and could not be detected at the first inspection.

In some States, there is also a bin inspection of the seed potatoes. All certified seed potatoes shipped outside a State, of course, or under tag, are shipped under inspection. The growers let the inspecting or certifying agency know when they are ready to ship, and some representative of the certifying agency makes the inspection.

All the seed potato producing States now have some scheme of certifying seed. The exact details may differ somewhat in different States, but in the main they follow the general method we outlined. In some cases the potato seed certifying agency is the State Department of Agriculture, in others the State Agricultural College or State Experiment Station. Dr. Stuart suggested that if you don't know just where to get certified seed, you take up the question with your State Experiment Station. The main point is to insure yourself against unnecessary losses through the buying of certified seed, he said.

"But look here, Doctor," I said, "you said there might not be enough certified seed to go around. Suppose we can't get any certified seed, what then?"

"Well, get certified seed if you can," insisted Dr. Stuart, but if you can't get certified seed, get as good seed as you can."

"What kind is that?" I asked, "and where do you get it?"

"The next best step in buying seed is to get border-line seed," he explained, that is, in areas entered for certification, there are often fields which just fail to pass the inspection. They may be very good seed, but just have a little more diseased plants than allowed for certification. But always get in touch with the State seed certifying agency and find out where such seed may be had. And it is a good idea to verify from the State seed certifying agency any claims as to the disease content of the field.

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ANNOUNCEMENT: Your farm reporter has just given you the results of his interview with Dr. William Stuart of the United States Department of Agriculture on making sure of your potato seed. We have instructed the reporter to see the poultry experts and find out about fattening poultry for the holidays. He will make his report on that interview tomorrow, through this Station -------.

UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

OFFICE OF INFORMATION
U. S. Department of Agriculture

YOUR FARM REPORTER AT WASHINGTON Wednesday, November 6, 1929

NOT FOR PUBLICATION

Speaking Time: 10 minutes.

Poultry Interview No. 8: FATTENING POULTRY FOR THE HOLIDAYS

ANNOUNCEMENT: Everybody who raises chickens, turkeys, ducks, or geese for market is looking forward now to the Thanksgiving and Christmas trade. And I can say for the rest of us, who are going to eat those chickens, turkeys, and so forth, that we're looking forward to it too. During the holidays people seem to be more particular about their poultry meat than during ordinary times. So we asked YOUR FARM REPORTER this week to get us some tips on preparing poultry for the holiday trade. All right, Mr. Reporter. What did you find out?

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Well, I found out one thing. It's simply that well-fattened chickens are in special demand for the holiday trade. And that most folks are willing to pay more for the high-quality meat at that time.

I wonder why poultry growers so often give less attention to fattening than livestock growers do. Mr. A. R. Lee, Department of Agriculture poultry husbandman, tells me that just as good results can be secured in fattening poultry as in fattening cattle or hogs.

The fattening process, he points out, not only increases weight but also improves the quality of flesh. This applies mainly, of course, to cockerels of the general purpose breeds, such as Barred Plymouth Rocks and Rhode Island Reds. It usually doesn't pay to try fattening Leghorns and the other lighter breeds. And as for hens, no matter what breed, they're in good flesh at this time of year and usually don't need fattening.

Most people, Mr. Lee pointed out, fatten chickens on the range. They do it by giving more feed and by increasing the proportion of corn and corn meal in the ration, beginning one to three weeks before chickens are marketed. The mash may consist of at least 60 per cent cornmeal. And only cracked or whole corn is used for scratch feed.

If you're using commercial mixed feed, Mr. Lee suggests converting it into a fattening ration by adding cornmeal. Feeding one part corn meal to one part mash gives good results.

For fattening roasting chickens, which bring excellent prices, both pen and crate fattening are practiced. Mr. Lee says that either method is very satisfactory. Crate fattening will produce a better quality of flesh, but on the other hand, it requires more work.

In pen fattening, you know, 20 to 30 chickens are confined to a pen and fed heavily on a fattening ration. A mash recommended by the Department of Agriculture is the following: 3 parts corn meal and 1 part middlings by weight, fed with skimmilk or buttermilk. Liquid milk is VERY desirable in any fattening ration. It tends to bleach the color of the skin, which is recognized as the mark of best quality in market poultry.

If liquid milk isn't available, though, here's a substitute mash: 3 parts corn meal, 1 part ground oats, 1 part middlings and 1/4 part meat scrap or dried milk. It's also well to supply some green feed if milk isn't used.

In any event the fattening ration is fed moist, mixed either with milk or water. And Mr. Lee recommends feeding it two or three times daily, supplementing it with a light feed of cracked corn. Of course, plenty of clean fresh water is essential all of the time.

Pen fattening usually requires from 7 to 10 days. And right from the beginning, Mr. Lee suggests, fattening birds should be carefully watched. Any that do not eat well should be removed and marketed. Otherwise, they're apt to lose rather than gain weight.

Now, as to crate fattening. Birds are confined either individually or in groups of from 6 to 10 in crates or batteries. The ration consists of buttermilk and ground grains mixed to the consistency of thick cream. A good ration may be made of 55 per cent cornmeal, 40 per cent oatmeal groats, ground oats without hulls or low grade wheat flour, and 5 per cent middlings or bran. Feed this 3 or 4 times daily in troughs.

Don't try crate fattening unless you have plenty of milk, Mr. Lee says. The mixture I just gave you should contain about 60 per cent of liquid milk, or else 15 per cent of dried milk.

Crate fattening takes from 10 to 14 days, depending on the size of the chickens. Small chickens require the longer time but they make more profitable gains.

In this country that's usually as far as crate-fattening goes. Over in England, though, and in several European countries where more attention is given to producing quality in market poultry, they go farther than that. Birds are crate-fattened first, and then crammed. Cramming produces a very high-quality flesh.

Regardless of the fattening method, though, there are a few general principles that <u>always</u> apply. Here are the pointers Mr. Lee gave me:

Feed lightly for the first day or two and then gradually increase the feed until the birds are getting all they will consume. The amount of feed must be regulated by the appetite of the poultry. Birds should always be ready for their feed, and any feed not consumed should be removed before the next feeding time. Fattening quarters, also, have a tendency to get dirty in a very short time. So strict measures must be taken to keep them clean and sanitary.

Finally, it must be remembered that when a bird is killed for market its crop should be empty. Therefore no feed is given from 18 to 24 hours before marketing time. However, poultry need water right up to the time they are killed.

"How much do chickens gain during fattening process?" I asked.

"Well," Mr. Lee estimated, "it takes from 3 to 4 pounds of grain to make a pound of gain in fattening if the grain is fed with 1 to 2 parts of milk. Where milk isn't used from 7 to 8 pounds of grain are necessary. Average gains of around 25 per cent may be produced with chickens weighing about 3 pounds apiece, 20 to 25 per cent on roasting chickens, and 30 to 35 per cent on broilers."

Now, just a word about fattening turkeys, which of course are in great demand for Thanksgiving and Christmas markets. Most turkeys raised on range don't fatten well in confinement, so it's best, Mr. Lee says, to range-fatten them for 6 to 8 weeks before they are to be marketed. He suggests the following plan:

Start feeding lightly in the morning and evening and gradually increase the quantity of feed until the turkeys are given all they will clean up three times a day. Equal parts of corn, wheat and oats may be used at first. As the weather gets cooler and the fattening period progresses gradually increase the proportion of corn until finally the ration is all corn.

Where turkeys have been raised in confinement and grown on a mash feed, fattening mashes give good results.

Mr. Lee also gave me a suggestion on fattening geese. Geese are usually fattened in pens of from 20 to 25. A good feed consists of a moist mash made of 1/3 shorts and 2/3 corn meal, supplemented by two feeds daily of corn mixed with some oats and barley. It's well, Mr. Lee said, to keep the pens partly darkened and to keep the geese quiet. Also, pens should be bedded with oat straw to keep them clean and to provide roughage for the geese to eat. An increase of from 4 to 6 pounds apiece may be secured.

There's a Farmers' Bulletin, by the way, that discusses fattening in some detail. It's No. 1541, entitled "Feeding Chickens." If you want more information, I'll be glad to get you a copy of it.

And now. So long, until tomorrow.

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ANNOUNCEMENT: YOUR FARM REPORTER has just been telling about his interview with Mr. A. R. Lee on "Fattening Poultry for the Holidays." That Department of Agriculture bulletin he recommended was Farmers' Bulletin No. 1541. Send your requests to YOUR REPORTER either at Station_____or in care of the United States Department of Agriculture in Washington.

UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

OFFICE OF INFORMATION

YOUR FARM REPORTER AT WASHINGTON Thursday, November 7, 1929.

(Regions 1, 3 and 5)

Cooperation Interview No. 8b: Fruit and Vegetable Grading and Pooling.

ANNOUNCEMENT: Your Farm Reporter at Washington has interviewed one of the specialists of the Cooperative Division of the Federal Farm Board, on the grading and pooling of fruits and vegetables. We sent the reporter to see about that because some of our fruit and vegetable folks don't seem to understand the purposes of the pool. ---- All right, we are ready for the report-------

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Mr. K. B. Gardner was the economist in the Federal Farm Board's Cooperative Division I saw about this. He didn't seem surprised that some fruit and vegetable farmers growl about the prices they get through the pools.

The trouble is they misunderstand pooling. If they hear of some individual grower getting more for his stuff than the growers who went in the pool, they get the notion it doesn't pay to pool. Or if they see where any market price for their kind of fruit or vegetables is better than the price they got through the pool, they blame the management. The individual grower outside the pool who sells for much less than the pool members get is overlooked. Of course, growers outside pools do sometimes get top prices. Sometimes they get bottom prices. They take their chances. And with perishable stuff like most fruits and vegetables, the chances are too big for any one grower.

One of the chief advantages of pooling, Mr. Gardner said, is that it spreads the marketing risks among all the members. It is really market insurance. For a like quality and like grade, the well-managed pool pays the same price to all producers.

Of course, in order to do that the pool management must apply definite grade standards. The fruits or vegetables must be graded and pooled according to quality so that returns to the member will be according to the quality he produced.

"What about sun-scald of potatoes? -- or other troubles that show up after packing?" I asked.

"In the case of troubles like that due to bad handling on the part of the farmer," Mr. Gardner said, "the only thing to do is to withdraw that grower's product from the pool. The grower who tries to slide by with an inferior pack, benefits at the expense of his companions in the pool.

"Some cooperatives don't get inferior products out of the pool, but the most successful do. If the producer of inferior stuff is allowed

to get away with anything like that, the pool management lays itself open to the charge of favoritism. Elimination of the inefficient members is vital to the success of any pooling system."

There are two general ways of packing?" Mr. Gardner went on to explain. There is the central pack and the growers pack. From the standpoint of the cooperative association, the central pack is to be preferred. With the packing done at a central plant, it is more easily supervised by the co-op officials and also easier to get uniformity of product. Many of the big apple and other fruit cooperatives maintain central packing plants equipped with sizing machinery for sorting into grade sizes. However, where a commodity moves to market in a short time or is highly perishable it is often impractical to handle it at a central plant. For such stuff as berries, and cherries, and potatoes, the field or farm pack is generally used. In such cases, the cooperative must maintain a force of field inspectors to see that the grading is done properly. But even with the best trained force it is harder to get uniformity in farm grading and packing than it is when a commodity is packed at a central plant.

With some fruits and vegetables, the pooling season is very short. One potato organization operates a daily pool. All cars shipped that day are included in the pool regardless of where they are shipped. As a rule, however, most pools are seasonal pools. They include all the stuff of like grade and quality sold during the season.

The aim of pooling by quality is to give the grower the benefit of the better prices for his better stuff. If by better selection of seed, or better cultivation, and better harvesting, the farmer delivers a better product for market, we all agree he should get the better prices the consumers are willing to pay for such better products.

If the demand for the different grades was even from one end of the season to the other, there would be no question about the grower being paid fairly for quality. But sometimes the demand changes in a short time. For instance, early in the season, the demand may be strong for a best grade of apples and weak for the next-best. Then later, the market for the next-best may strengthen.

Or large quantities of low-grade apples, for instance, may be marketed when prices are up. Then prices may fall, and the higher-grades may reach market when conditions are not so favorable. The net result for the season may be that the returns from the high-grade pool and from the low-grade pool may not reflect the true market differences between the two grades. The man who produces the high-grade stuff should be paid for his extra expense and trouble.

The way for the cooperative to do that, Mr. Gardner said, is to fix price differentials between the different grades on the basis of the usual price differences between those grades on the market. If the cooperative is to sell according to quality, it must see that the members are paid according to the quality they produce.

And that brings up that other big pooling problem; and that is, the time of paying. From the standpoint of efficient management, it is usually important to have a pool extend over a considerable time. But the growers can't always afford to wait. The financial circumstances of some growers often make it hard for them to market through a seasonal pool.

Cooperatives operating long time pools aim to advance as much as possible to the growers, but this question of waiting for their money by growers is still one of the difficult problems faced in pooling. However, although that question has not been settled to the complete satisfaction of everybody, the protection offered by the pooling feature affords the grower his returns at much less risk than if he goes it alone.

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ANNOUNCEMENT: This time next week we will have our farm reporter in Washington inquire about cooperative creameries. He will interview a specialist connected with the Federal Farm Board and his report will be broadcast through this Station--------.

UNITED STATES DEPARTMENT OF AGRICULTURE
Radio Service
OFFICE OF INFORMATION

YOUR FARM REPORTER AT WASHINGTON. Thursday, November 7,1929
(For Regions 2 and 4)

Cooperation Interview No. 8: Turkey Marketing Pools and their Future.

ANNOUNCEMENT: Turkey time will soon be here. Fact is, it is already turkey time for our turkey raisers. For that reason, we told our farm reporter at Washington to drop around to the Federal Farm Board and ask some of the co-op experts about the turkey pools------Well, Mr. Reporter, what are the prospects for turkey marketing pools?------

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Turkey raising has been shifting; from the North and East, to the South and West.

In the South and West, cooperative marketing of turkeys has spread fast. A number of turkey pools have been formed in the last few years. And, Mr. Gordon W. Sprague, of the Cooperative Marketing Division of the Federal Farm Board, tells me there is likely to be considerable further development in the next few years.

Mr. Sprague has been making a special study of turkey pools. I gather from what he says that the trend in turkey marketing is toward consolidation of local pools; or at least, cooperation between them, to solve some of our big turkey marketing problems. In fact, there are a few extensive state-wide or regional turkey marketing associations.

Most turkey pools, however, are still the simplest sort of bargaining associations. The turkey market is largely confined to the Thanksgiving and Christmas holidays. It is highly seasonal in character, and so most of the pools don't keep up any permanent organization. The management usually costs nothing. Often the County agent working with the pool manager finds out from the turkey raisers how many turkeys they will agree to put in the pool. Estimates of the total number are given prospective buyers, and they are asked to send in sealed bids to be opened on a specified date. They are asked to make separate bids for the different grades of turkeys in the pool.

And there is where we often find trouble. The grades ordinarily used are the old buying grades. Those grades don't represent the preferences of consumers. They are not the grades used in the retail market. When strictly interpreted, buyers are given an unfair advantage; for they are such that many a turkey will be graded second class that will later sell as first grade turkey in the retail market.

Mr. Sprague says that the pools could avoid that sort of thing, if all the pools would adopt the same standard of quality. He suggests that the standard grades developed by the United States Department of Agriculture and impartially applied by Federal inspectors would give pool members a better break. As it is,

the highest bid often doesn't mean anything. The buyers often offer a high price for the top grade and a low price for the second grade; and then by very severe grading force enough of the turkeys into the lower grade, to bring down the average price of the pool.

Another way in which turkey marketing cooperatives are weak is in their financial development. Under the present system of selling turkeys, all the pools need is enough to buy packing materials before the time for the delivery of turkeys and a little for clerical work and supplies. Much of the clerical work has been carried on through the county agents' offices, and the turkey marketing cooperatives have needed so little capital, they have had little trouble getting it.

Of course, as Mr. Sprague points out, that's one reason turkey pools have developed so fast. But, on the other hand, the present type of organizations have developed about as far as it can. In order to solve some of the problems now faced by the turkey raisers, turkey marketing will have to be developed further and be better financed.

For instance, under the present plan they are frequently very few bidders. In face, sometimes no satisfactory bid is received. In case the bids are rejected, the association is no better off. The manager must take the chance of trying to find a sale for the turkeys in a market where he is at a disadvantage.

Associations which are better financed, however, can sell to buyers who do not bid on other pools. That's because they are in a position to make contract for delivery and, being responsible financially, they find buyers who are not in a position to have local representatives.

Turkey marketing is a short time proposition. If an association is not well financed, it has to sell at once or lose the market, since it takes about 15 days for the turkeys to get to the consumer. Some associations have realized this sales problem and lay aside a fraction of a cent a pound on all the turkeys sold, to accumulate capital and strengthen their sales organization. In case of necessity, the manager of a well-financed pool can ship the pooled turkeys to market and sell them after they get there.

In fact, Mr. Sprague holds that there are possibilities in developing turkey marketing associations to carry the marketing process further that way as a regular thing.

The figures show, he says, that, as a rule, the longer the producers can hold their crop in their own control the more nearly they can come to selling the turkeys for a price which will represent their actual value. Most western turkeys for the Thanksgiving market, for instance, are sold in October and while they are moving to market, the price is usually going up. Some years, when buyers are overoptimistic in setting the buying price, the turkey raisers lose money by holding, but that does not happen often. So it seems there may be an advantage for turkey producers to organize to deliver their turkeys at the market instead of selling them at the loading station.

That would mean more of an overhead organization, and Mr. Sprague warns turkey raisers to study out the marketing question thoroughly before going in for more overhead expense. In some cases, with some pools under some conditions, it may work well; and in others, not so well.

He thinks, however, that a plan used in Nevada might help small pools right away. That is, if the local pools would agree to receive and open their bids on the same day, or if several pools would get their bids at the same place and then sell together, they could get information which might be of value to all of them. But even so, in order to cut out differences in prices, further development of sales organization on a big scale will be needed, by cooperative turkey marketing associations.

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ANNOUNCEMENT:: Our Farm Reporter at Washington will again bring us information from the Federal Farm Board next Thursday at this time. In the meantime, however, he will report on other farm topics through Station_____every day except Saturday and Sunday.

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UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

OFFICE OF INFORMATION
U. S. Department of Agriculture

YOUR FARM REPORTER AT WASHINGTON Friday, November 8, 1929

NOT FOR PUBLICATION

Speaking Time: 10 Minutes

Dairy Interview No. 8: KEEPING THE DAIRY HERD HEALTHY

ANNOUNCEMENT: YOUR FARM REPORTER took a trip this week to the Department of Agriculture dairy experimental farm at Beltsville, Md., just a few miles outside of Washington. There he interviewed Dr. Fred. W. Miller, a senior veterinarian and physiologist for the Bureau of Dairy Industry. And today he brings you a report of that interview. The subject is "Keeping the Dairy Herd Healthy." All right, Mr. Reporter.

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The secret of keeping dairy cows healthy is to KEEP them healthy. In looking after the dairy cow's health an ounce of prevention is really worth a good deal more than a pound of cure.

We all know that steps taken to prevent diseases are much cheaper and more satisfactory than steps taken to cure them. And we all know, too, that cleanliness, or sanitation, is our chief safeguard against disease germs and parasites. But I'm not so sure that we appreciate just how important it is. Doctor Miller made one statement that impressed me particularly. Here's what he said:

"If everyone practiced cleanliness as it ought to be practiced--that is, took all the steps necessary to insure cleanliness--90 per cent of our disease troubles would be avoided.

The most effective destroyer of disease germs known, Dr. Miller went on, is sunshine. And aside from the sun, there's no greater germ enemy than good old-fashioned soap and water.

If we could always provide dairy cows a good pasture, free of weeds, stumps, brush, sticks and other trash, with a continuously clear sky and bright sunshine we wouldn't have to worry much about disease. Unfortunately, that isn't possible. Cows must be housed for feeding and milking, and for protection from weather changes. And there's where our troubles begin.

I asked Dr. Miller to tell me what he considered the essential steps to insure cleanliness on the dairy farm. He began with the barn. In the first place, it's necessary that the stables be clean, well-ventilated and well-lighted. Light is especially necessary because it is difficult to see dirt in the dark.

"Type of construction," he pointed out," influences the effort required to keep the stable clean. In any event, though, the cow ought to have a thick bed of clean straw or shavings. And the soiled bedding and manure should be removed at least twice every day.

"Now, if you have an earth floor, it's necessary, in order to insure cleanliness, frequently to remove the dirt to a depth of 6 inches and to replace it with clean earth. Wood floors have to be replaced whenever they become so dirty that thorough scrubbing fails to get them perfectly clean. Cement and brick floors, of course, can easily be cleaned by hard scrubbing with hot water and soap. That's why concrete and brick are so desirable in dairy barns."

"Does cleanliness demand that the interior of the barn be painted?" I asked.

He replied that it did, with a white paint that does NOT contain lead. It's hard to keep a place clean unless you can be sure that it IS clean.

"And," he went on, "feed troughs are another source of parasites and germs. Troughs can be so constructed that they can be placed out in the sun. That's probably the best plan. But if they are stationary, a vigorous scrubbing with hot water and soap at least every two weeks is essential.

Then he emphasized the necessity, from the standpoint of sanitation, of separate forks, one for handling hay and another for handling manure and bedding. That's true also of other implements used both for moving manure from the stable and for hauling feed.

Of course the cow herself demands some individual attention. Dr. Miller advises grooming twice daily. Before milking, the udder may be cleaned with water. And the milker's hands should be cleaned with water before milking EACH cow.

When animals get sick they have to be isolated from the rest of the herd. For this purpose Dr. Miller recommends box stalls arranged so that no fluids and litter can come in contact with the other animals. These stalls need a scrubbing with hot water and soap immediately after the sick cow is removed.

I've given you the main points Dr. Miller made in answering the question: How to keep the dairy cow healthy. Now some of you may be seeking reasons for such strict sanitary measures. At least, MY curiosity got the better of me and I started asking him "Why?"

"Well," he answered, "in the first place parasites and bacteria cannot maintain themselves in clean surroundings. Everyone knows that. Now let me give you an example. I know of a herd that was badly infested with lice. Then the stables were thoroughly cleaned and the cows were thoroughly cleaned. The lice disappeared. Not another louse was seen in

the barn until other infested cattle were brought in two years later.

"As to using separate implements for handling feed and manure--Well, one disease that spreads that way is abortion. Using the same implements for handling feed that you use in disposing of the aborted fetus and membranes is a sure method of spreading the disease.

"Why use white paint that contains no lead? Young cattle, you see, lick the walls. If the lead paint is licked off lead poisoning results. And death follows.

"Regarding the necessity of washing your hands before milking each cow, I personally have observed this: cow pox, other sores and perhaps garget spread from cow to cow when the hands are not cleaned each time.

"Finally, I'd emphasize this: a dairy barn isn't clean, and your cows aren't free from danger of infection, until every fly speck is removed."

Cleanliness, of course isn't the whole story, although it's the main point. Dr. Miller also pointed out that lots, passage-ways and pastures can be arranged to prevent injuries.

"A barbed wire fence," he said, "is serviceable around a large field where cows have plenty of room. But it becomes dangerous around small lots. Foreign objects, such as sticks and wires, often cause injury. Narrow doors lead to crowding and accompanying injuries. Leaving paint buckets around where animals can get at them often cause the deaths of any number of cows.

"Many digestive disturbances," he continued, "can be prevented by care in removing wires, nails and other foreign objects from the feed. Be sure, also, to remove all feed that has become moldy. And speaking of digestion, we can't overlook the importance of water. It is a great aid to the digestive process and the dairy cow requires an abundance of it.

"One of the most important preventive measures, of course, is vaccination. Some localities are known to harbor bacteria that cause such acute infectious diseases as hemorrhagic septicemia, blackleg, anthrax and keratitis. Losses from all those diseases are prevented by systematic vaccination.

Chronic diseases, such as tuberculosis and abortion can't be controlled through vaccination. Tuberculosis, however, is being eradicated from the country through testing and disposal of diseased animals. A herd that's free from tuberculosis can easily be kept free by this method.

"In the same way abortion may be kept from cattle that are free from it by use of the agglutination or blood test. If the disease is present in the herd you can apply this test to determine how extensive it is. And with that information as a guide your local and state veterinarians will be able to recommend steps that will prevent further losses."

"Finally," Dr. Miller concluded," I'd say these two things to your radio dairy-men friends. One is this: Unless it is absolutely necessary don't buy dairy cows. Raise them. All of your preventive measures may go for naught if you keep on bringing in new mature female stock that may carry disease germs or parasites into your herd. And second, use your veterinarian as an adviser on preventing as well as on curing disease. A reliable veterinarian really should be of more value in helping you KEEP the dairy herd healthy, than in treating your sick animals."

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ANNOUNCEMENT: With this talk today on "Keeping the Dairy Herd Healthy," YOUR FARM REPORTER concludes his eighth week on the air over Station_____. He'll be back Monday to talk to livestock farmers. And here is a list of the bulletins mentioned by the reporter this week. You can get them free by either writing to this Station or writing direct to the United States Department of Agriculture, Washington, D.C. The bulletin on Market Classes and Grades of Livestock was Department Bulletin 1360; and that bulletin on "Feeding Chickens" was Farmers' Bulletin No. 1541-F.

UNITED STATES DEPARTMENT OF AGRICULTURE
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YOUR FARM REPORTER AT WASHINGTON Monday, November 11, 1929.

NOT FOR PUBLICATION

Speaking Time: 9 minutes. All Regions

LIVESTOCK SUPERSTITIONS

OPENING ANNOUNCEMENT: Well folks, here's the Farm Reporter again. Last Monday he told you how to grade livestock for the market. Today he is on a brand new subject. This time he is going to talk about superstitions in livestock. He may even tell why a white horse and red headed woman together, bring good luck. I'll let him do all the explaining. Here, Mr. Reporter, take the 'mike' and tell us about those superstitious ideas.

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I know you are not all going to agree with everything I say today about superstitions. I don't blame you. Fact of the business I can hardly believe it all myself. You see I was brought up in a section where a pig had its tail cut off in infancy to save corn. It was a well-established superstition that it took exactly one bushel of good corn to fatten the tail of a hog. So you can't blame me for not falling right in against all these superstitious ideas about livestock. I know postively that some of them are bad, many absolutely unfounded, and still others worse than nothing, but they have been handed down to us --- so I just ask you,---what are we going to do about them?

I couldn't help being born way out in the country where the sun set between our house and town and where the owls roosted with the chickens. Naturally under such conditions I picked up a lot of purely imaginary and superstitious ideas,--- like the bark being thickest on the north side of a tree, that a rooster is necessary to make hens lay, that it is bad luck to turn back, disastrous to open an umbrella in the house, to spill salt, and finally that 7 long years of bad luck attend the breaking of a mirror on Friday morning.

I'm sure you'll all agree that I had a superstitious background. So, when a man from a certain section wrote in and asked me to discuss livestock superstitions over the radio, I started after Uncle Sam's scientists in the Bureau of Animal Industry, in search of more information on superstitions.

I found it. Dr. T. P. White, of the Division of Hog Cholera Control, told me about superstitions in hogs. Not long ago Dr. White visited a hog raiser whose hogs were dying with cholera. "Have your hogs been vaccinated?" inquired the doctor. "Yes, indeed," was the hog raisers reply. "Did you use good serum in the vaccination," Dr. White asked. "No," the hog raiser answered, "I used blood from that old brown mule over there. He never had cholera. His blood is free from the disease, and when the mule blood is injected into a hog, that hog will not have cholera either." This is not only an imaginary cure for cholera, but a dangerous practice.

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On another occasion a man testified at a public meeting that he cured his hogs of cholera by feeding them a skunk carcass. He thought that not even a disease would stay near a skunk long.

Another imaginary remedy for cholera is to spit tobacco juice down the pig's throat.

Dr. White also related an instance where a man had burned a big place on the back of each pig's neck to prevent cholera.

There is a superstitious belief in some sections that cutting off the pig's tail will prevent and even cure cholera. Such a method not only fails to cure the disease but may scatter it generally.

In a few sections there is an imaginary belief that feeding salt to cholera hogs will cure the disease. Dr. White said it had never cured a case yet.

A common superstition in many sections is that killing hogs on the light of the moon will cause them to go to lard, while butchering on the dark of the moon will increase lean meat for sausage and ham. Still another fallacy is that butchering hogs on the light of the moon will cause the meat to spoil. Hundreds of experiments have proven beyond any shadow of a doubt that such beliefs are purely imaginary.

Quite a number of people are strong believers in the zodiac, and will not perform any blood-spilling operation on animals unles the sign is right. If the sign is in the heart or head the animal will die. The sign must be in the knees or feet. This belief is unfounded.

I next visited Dr. C. D. Lowe who took me to task about my sheep superstitions. I asked him if sheep tea helped measles to break out. He said, "No, I think not. I'd rather have ginger ale for mine."

Then he told me that there used to be a belief that mutton would taste of wool if the pelt is permitted to touch the carcass in the process of dressing, regardless of many later washings. "Nothing to it," he remarked.

I asked him if sheep really "poisoned" grazing land for cattle. "No," he answered. "The way that superstition probably originated was from the fact that sheep forage very closely, and force animals following them to eat non-palatable or even poisonous plants."

My next man was Dr. W. M. MacKellar, a cattle specialist and he talked to me about cattle superstitions. You people know about 'hollow horn and wolf in the tail', and know there is absolutely nothing to those ideas. A cow's horn <u>is</u> hollow, and the space increases with age, but that has nothing to do with sickness or diseases. Why any person wants to cut open a cow's tail and put irritating salt in the cut to torment the cow, is beyond me, but it used to be done, and I'm not saying that it was very far back either. Dr. MacKellar saw an ox recently with gimlet holes in his horns where turpentine has been squirted into the horns to cure the imaginary 'hollow horn.' 'Wolves' in the tail is another superstition.

"Loss of cud" is a superstition to be found in some sections even yet. A

cow grazes rapidly, swallows grass in large quantities, and then when she is resting regurgitates or belches up the grass, for rechewing. Should she be off feed and not chewing her cud, there is an imaginary belief that she has "lost her cud," and a dish-rag, piece of fat meat, or a ball of well beaten hay is given her to replace the lost cud. "Not a word of truth in it," remarked Dr. MacKellar.

Here's how we got cattle ticks according to another false notion. A cow died and her spleen was buried. It degenerated into millions of ticks, and we have had them ever since.

During an outbreak of foot-and-mouth disease a man in the Northwest recommended the following cure: Erect a platform two feet above the ground. Place the affected cow on this platform so as to face the north. Then give her a nice red apple. It is hard to believe such things take place.

A 'bloated' cow is supposed to have the devil in her according to an imaginary belief in some sections. When the swollen abdomen is punctured by a trocar and canula and a lighted match is touched to the outrushing marsh gas it will frequently burn. But this does not prove the devil is inside and has his fires burning.

A common fallacy in some sections is that silage rots the teeth of cattle. There's not a thing to it--the scientists say.

I struck another scientist who told me there was nothing to 'dog days.' so far as rabies is concerned. "Nothing to it," he said. "A dog is as apt to go mad at one time as another."

Thank goodness there are not many superstitions connected with the horse. "Haws," an imaginary disease of the eyelid, and "lampas," an imaginary disease of the roof of the mouth, are the two common ones. Both are treated by burning with a hot iron. This is the most cruel of all treatments, can do no possible good, and may seriously injure a good horse.

After talking with these specialists I wish to assure you postively that there is absolutely nothing to all these imaginary, superstitious beliefs about livestock. Some of the treatments are cruel, causing the helpless animal untold suffering. Putting fresh salt in a fresh cut in a cow's tail, and burning the inside of a horse's mouth or eye with a hot iron, are barbarous, and should be stopped.

We have scientific information on the proper treatment of livestock ailments that actually exist and there are enough real diseases without imagining any more. Our forefathers believed in witches but we know better today. If you get sick, you call a physician who has expert knowledge concerning human diseases. For the same reason if something gets wrong with an animal and it appears serious, call the veterinarian. Don't try some 'quack' remedy on your livestock, your family, or yourself.

And I want to say that a veterinarian has to be a smart man. A human patient can talk and tell how he feels, but a horse can't say a word. The veterinarian has to find out for himself what the trouble is. One of the biggest clinics in this country has a veterinarian on its staff to assist in diagnosing

diseases of human beings.

My time is up and I will have to stop. I hope to give some dairy superstitions sometime in the near future.

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CLOSING ANNOUNCEMENT: You have just heard your Farm Reporter talk about livestock superstitions. If the scientists converted him with all his superstitious beliefs, I think the rest of us can fall in line too. This program comes to you through the cooperation of the United States Department of Agriculture and Station _____.

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UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

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YOUR FARM REPORTER AT WASHINGTON Tuesday, November 12, 1929.

Speaking Time: 9 Minutes.

Crops and Soils Interview No. 9: New Developments in Weed Control.

ANNOUNCEMENT A lot of things have been said about weeds. Most of those things wouldn't bear repeating to a polite radio audience. But our neighbors are interested in getting rid of weeds. Therefore, we asked your Farm Reporter at Washington to inquire of the weed specialists if there are any new developments in weed control. Seems to us, we've heard of new ways to control weeds, how about it, Mr. Reporter.

There are new developments in weed control.

When I asked about them, Mr. M. W. Talbot, who is in charge of weed-control investigations in the U. S. Department of Agriculture, told me of three new developments. First, he said, interest in weeds is increasing. Judging by the number of inquiries received in the Department, more and more farmers are anxious to find out whether strange plants in their fields are likely to prove troublesome. And by the way, if you send any plants to be identified by the Department's specialists, be sure to send a specimen with flowers or seeds, or, better yet, with both.

This growing interest in strange weeds is a very wholesome development, Mr. Talbot declared, for failure to recognize especially bad weeds as soon as they appear in a field results in much unnecessary weed trouble. If attacked while the plants are few and scattered, most weeds are easily whipped. If unmolested until they have gained a firm foothold, however, the cost of suppressing them is much greater. This is simply another way of expressing the old adage that "An ounce of prevention is worth a pound of cure."

"How then can we prevent weeds?" I asked. The reply was, "Much can be accomplished by preventing the ripening of weed seeds and by insisting on high-grade crop seeds." Few of us realize that some of our common weeds, such as wild carrot or burdock, may produce twenty thousand seeds or more on a single plant. And that's not the worst of it. All the seeds do not sprout the first year. Some of them may wait several years. That's why some old-time farmer coined the saying, "One year's seeding makes seven years' weeding." Farmers' Bulletin 660, entitled "Weeds: How to Control Them," contains other interesting and helpful information. For example, it brings out the forceful fact that the use of cheap crop seed is very poor economy. Get the best seed you can buy, and thus avoid sowing weed seeds too.

But no matter how carefully you may handle your own property, weeds or weed seeds may be blown onto your fields from your neighbor's. Then, too,

weed seeds may be carried in irrigation or flood waters, or in other ways. Consequently, the best plan is for the whole community to get together on this problem of weed-seed control.

Another promising development relates to weed-killing chemicals, particularly certain chlorates. Recent work along this line must be regarded as still in the experimental stage. Federal, State, and commercial agencies are trying to develop improved methods of employing effective weed-killing chemicals more economically and with less risk, but final conclusions regarding the success of these experiments are not yet known. With most farmers, the possible use of weed-killing chemicals is limited to small patches of especially troublesome weeds that can not be dealt with to advantage by ordinary eradication methods. For large areas, the most practicable weed-control methods still consist of well-chosen cropping systems and thorough cultivation.

A third development in weed control is the use of paper mulch. Dr. L. H. Flint, of our Biophysical Laboratory, can tell you about that, Mr. Talbot said. He was just back from a long trip on which he inspected the extending commercial application of paper to keep down weeds and stimulate plant growth.

Last year, there were only 500 acres under paper mulch in this country. This year there were more than 5,000 acres under paper mulch in this country. That is doing pretty well. If paper mulch keeps spreading at that rate, papering our fields will be quite a business. And Dr. Flint reports that most the growers seem enthusiastic about the results they get. Just how well it pays for the extra cost of the papering compared to other methods has not been fully worked out yet.

However, for specialized crops which have a high value per acre, especially where an early crop is desired, there seems to be little doubt in Dr. Flint's mind that paper mulching will spread. Of course, the chief idea in using the paper is to stimulate plant growth. But it also has a decided advantage for use in controlling some of the more expensive weeds; on crops where a great deal of hand weeding is needed.

In the case of particularly persistent and obnoxious weeds, such as wire grass, witch grass, and poison ivy the use of paper may become of first importance as a means of weed eradication, Dr. Flint declares.

In fact, it was for weed control that paper mulch was first tried. On one of the unirrigated sugar plantations in Hawaii, rank weed growth was a big problem. Out there the field practice was to rake the crops refuse, such as dead leaves, and tops, and the like, into the middle spaces between the freshly cut rows, and let it rot. That trash cover kept down weeds, for awhile, but didn't last long.

The manager of the sugar company decided that it might pay to substitute a cheap grade of asphalt paper for the crop residue and so keep down the weeds for a longer time. He tried it. That was in 1914. The paper between the rows kept the weeds from growing under it all right, but the weeds grew around the stalks of cane in the rows worse than ever. It took expensive hand hoeing to get them out. In 1916 a lighter weight paper was used and laid directly over the harvested stubble or seed cane. That

mulch was easily pierced by the sharp young cane shoots, while the weed growth was kept down. It was soon found that due to the paper keeping the soil warmer and keeping in the moisture better, the growth of plants was stimulated and while no extensive use of the method on sugar cane developed a more vigorous crop resulted. This led to its use to stimulate the growth of pineapples and other crops. Now that is the main use; but the experimenters have still an eye to the possibilities of paper in weed control. Suggestions for Paper-Mulch Trials are contained in Circular No. 77.

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ANNOUNCEMENT: Those bulletins mentioned by the Farm Reporter can be had free of charge by writing to Station_____ or by writing direct to the United States Department of Agriculture at Washington, D. C. If you want the one on "Weeds and how to control them," ask for Farmers' Bulletin No. 660, "Suggestions for Paper-Mulch Trials" is Circular No. 77.

UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

OFFICE OF INFORMATION

YOUR FARM REPORTER AT WASHINGTON Wednesday, November 13, 1929.

NOT FOR PUBLICATION

Speaking Time: 9 Minutes

Poultry Interview No. 9: KEEPING HENS COMFORTABLE IN COLD WEATHER

ANNOUNCEMENT: Not long ago, you'll remember, YOUR FARM REPORTER told us of the interview he had with Mr. A. R. Lee, Department of Agriculture poultry husbandman, on "Housing the Laying Flock." Well, today he's going to continue that discussion and add some other points on keeping hens comfortable in cold weather. Ladies and Gentlemen, YOUR FARM REPORTER.

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Everyone who has raised poultry very long knows that keeping hens comfortable isn't merely a matter of kindness to dumb creatures. Comfort has a very definite dollars and cents value. Practical experience and experiments both, show us that comfortable hens produce more eggs than hens which are not comfortable.

Keeping hens comfortable means a good deal more than just providing them with a good house to live in. But good housing IS probably the most important single item. So let's take a few moments to review the main point on housing emphasized by Mr. A. R. Lee of the U. S. Department of Agriculture.

The first requirement is plenty of room. To prevent crowding, and all the troubles that go with it, the standard allowance is $3\frac{1}{2}$ to 4 square feet per hen for Leghorns and lighter breeds, and at least 4 square feet per hen for the heavier breeds.

Second, the house must be dry. Securing dryness is largely a matter of proper construction and good ventilation.

Next comes the question of planning the house so that the hens will get plenty of sunlight. Direct sunlight is practically essential to good health. It is possible to raise chickens without sunlight by use of ultra-violet-ray lamps, or by putting cod-liver oil in the ration. But nothing has yet been discovered as beneficial as the direct rays of the sun. And the sun's rays are free.

When I went back to see Mr. Lee the other day the point that he put most emphasis on was ventilation. Naturally good ventilation is especially important at this time of year.

By this time, Mr. Lee pointed out, poultry houses in most sections of the country are closed up for winter. Meaning that all openings in the rear

walls and ends of the house are shut. And that all cracks, if there are any, are stopped up. All fresh air should come from the windows in front. Otherwise there will be dangerous drafts.

"Openings in front," he told me, "should be partially closed at night. But they should be opened during the day, except in very cold stormy weather. NEVER entirely close the poultry house. Always have at least one window open in every pen."

I asked him about ventilating systems of flues and pipes. Two of my friends have installed systems recently.

"Yes," he replied, "some poultry raisers are using them. But I wouldn't consider them necessary for the average one-story poultry house, which is only from 14 to 20 feet deep.

"Nowadays, though, there is growing interest in 2-, 3- and even 4-story poultry houses in various parts of the country. I know of several cases in which barns have been remodeled into 2- and 3-story houses. And they're proving successful. Here, of course, the ventilation problem is much more complicated. Ventilation in addition to that secured through windows and doors, is essential in such houses.

So much for comfortable housing. Mr. Lee then went on to discuss litter, sanitation, confinement of hens, artificial lighting, and feed and water----all of which are important items in making hens comfortable.

Clean, dry litter, he pointed out, adds greatly to the hens' comfort. It helps to keep the floor warm, and clean, it furnishes a scratching place, and it absorbs moisture. He recommended that litter be 3 or 4 inches deep. As to materials, straw, shavings, sawdust and peat moss are all good. Of course, when litter becomes dirty and damp it no longer furnishes comfort for hens, and has to be changed.

Naturally sanitation is very necessary from the standpoint of comfort. Hens can't be comfortable if they're bothered by insect pests. And sick hens probably are just as uncomfortable as sick people. Careful sanitation safeguards against both insect pests and sickness. It necessitates cleaning and disinfecting the house carefully, immediately removing all sick birds and other measures that you all know about.

Colds, roup and chicken pox are usually prevalent at this season. But Mr. Lee says all of them may be avoided through strict cleanliness and careful management.

Regarding artificial lights, Mr. Lee explained that they add to the hen's comfort by giving her a chance to eat more feed and by reducing the long nights during winter. Artificial lighting is now used generally on commercial poultry farms, he said, and to an increasing extent in small flocks. It is most beneficial in the north, where nights are longest, and in sections where high prices are secured for fall and winter eggs. Artificial lights, you know, increase production during the fall and winter

when prices are usually highest. They don't affect total yearly production very much, though. Their use generally results in a slump in late winter.

Mr. Lee suggests the use of electric lights, since they are easiest to operate. And for ordinary purposes he recommends a 13-hour day. That means turning on the lights between 4 and 5 in the morning.

Changing the subject again, he continued:

"During cold stormy weather hens are more comfortable when confined to well ventilated, dry poultry houses than when they're allowed outside range on frozen ground or muddy yards. In fact, most commercial poultry raisers keep hens confined from early fall until the weather is well settled in the spring. Under such conditions hens are less affected by changes in the weather. And they'll ordinarily produce more eggs.

"However, when hens are confined feeding and housing become extremely important. And unless hens can be given careful attention, it's better to let them out of doors. Out there they get plenty of sunlight and can scratch for the food that might otherwise be lacking in their ration.

"Liberal feeding," he went on, "is another essential to comfort in winter. Hungry hens aren't comfortable. And they usually aren't profitable layers. Hens need a full feed of grain in the afternoon. Then they have a store of feed to last through the long winter nights."

My interview with Mr. Lee really ended here. But after I had returned to the office he telephoned me.

"I neglected to mention one very important point," he explained. "Water. Plenty of water is just as essential as plenty of feed. Hens should never be without it for any period of time. Where dry mash is fed an abundance of available water is especially necessary."

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ANNOUNCEMENT: YOUR FARM REPORTER didn't mention any bulletins today. But if you want information write him in care of Station_____ or at the Department of Agriculture in Washington. He's always glad to help his radio friends.

UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

OFFICE OF INFORMATION

U. S. Department of Agriculture

YOUR FARM REPORTER AT WASHINGTON. Thursday, November 14, 1929

NOT FOR PUBLICATION

Cooperative Interview No. 9: Organization of Cooperative Creameries.

ANNOUNCEMENT: This is the day your farm reporter at Washington tells us what he has learned from the cooperative association experts of the Federal Farm Board. For the benefit of some of our friends who have been thinking of organizing a cooperative creamery, we asked him to find out the main points to keep in mind--All right, Mr. Reporter, how is the cooperative creamery business going these days? ----

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The cooperative creamery business is moving right along, according to what Mr. Tom G. Stitts, of the Division of Cooperation of the Federal Farm Board, told me. He said that about a third of all the creamery butter manufactured in the United States is now made in cooperative creameries.

Most of those cooperatives factories are in the big butter states of Minnesota, and Iowa, and Wisconsin, and Michigan, and California. Nowdays, however, there is considerable interest being shown in this creamery question in the newer dairy sections, such as the Dakotas, and Nebraska, and Kansas, and Missouri, and Oklahoma.

Before organizing a new creamery, Mr. Stitts said, the thing to do is to consult with the College of Agriculture of your state or with the United States Department of Agriculture. From their specialists you can get free information which may prevent you running into trouble.

"The first essential for a cooperative in any part of the country," Mr. Stitts went on, "is enough milk or cream." It seems that it would be unnecessary to tell men figuring on starting a creamery that they need an adequate volume to keep down costs and meet competition, but a number of creameries have failed from lack of big enough volume of business, especially in the newer dairy sections.

I asked him just what he considered adequate volume. Of course, he said that depends on the conditions and the locality. Generally speaking, however, he estimated that from 600 to 1000 cows were desirable.

In planning a creamery, it is always well to first make a survey of the trend of production in the area on which the factory will have to depend. Find out how many young cattle are coming on, and whether the people want to milk more cows, and whether there is plenty of feed; or whether the conditions creating an interest in the creamery proposition are just temporary.

After you have made certain there is enough volume in the community to

warrant the organization of a creamery, the next thing is to have members signed up on individual producer contracts, which require all butterfat sold on the farm be delivered to the cooperative.

It is also well to remember, Mr. Stitts pointed out, that the small cooperative is at a disadvantage in selling unless it can tie up with a large marketing association or federation. Even then, the creamery may be at a disadvantage, if it can not ship in carlots or combine with some other association to ship in car lots. Just what a difference that makes is shown in the case of the Minnesota creameries. By being able to ship in carlots, it is estimated they make a net saving of more than ½ cent a pound.

After making sure there are enough cows on the farms within easy reach of the proposed creamery, and after signing up enough members to deliver enough milk to run the creamery economically, the next thing is to plan the buildings and equipment. Mr. Stitts warned that in doing that we should always keep in mind a proper relation between the fixed investment and the volume of business. Better consult asmany practical creamery men as possible, and visit other cooperativecreameries. Also consult with the specialists at the United States Department of Agriculture or at your State College. You can get a lot of information that way without cost. And it may save you from some big mistakes.

The plant, of course, should not be too big or too expensive for the amount of business it will do. However, the trend in the United States now is to build creameries equipped to handle whole milk. That means, as a rule, equipment both for butter making and for processing the skim milk. A careful study should be made as to the most economical way to dispose of the skim milk. At the present time, the greater part of it is used in the manufacture of powdered skimmed milk. Right now, however, there is a renewed interest in the use of the skim milk for making casein.

Many cooperative creameries in this country, Mr. Stitts said, are not incorporated. There are merely partnership arrangements. If we intend to operate a cooperative creamery, he suggested that we incorporate an association for that purpose. Incorporation doesn't cost much, but it has several decided advantages. Members of an unincorporated association are liable as partners for the debts or any claims against the association. Generally speaking, that is not the case with an incorporated association.

When an association wants to bring suit or transfer property, it runs into trouble if it is not incorporated, because each and every member has to be named in the suit or in the deed or what not. When the association is incorporated, however, it can carry on business in its own name.

But how are we going to finance our creamery? That is the question we must settle before we get very far. Mr. Stitts said that that is one of the most important problems; to work out a sound financial policy.

Sometimes the money can be raised by the sale of common stock to the members. But often it is necessary to have some other way of getting the capital. In many cases, the sale of bonds or preferred stock has been found practical. Bonds will be more desirable as an investment, and so more salable, if they are secured by a first mortgage on the properties of the association.

Ordinarily, the bonds can be sold bearing a little lower rate of interest than preferred stock.

Some of the larger creamery associations use certificates of indebtedness. Another method of getting funds is for each interested producer to give the creamery his personal note for an amount based on the number of cows he owns. Those notes are used jointly as security for a loan from the bank.

Whatever plan of financing is used, it should be a well thought out practical plan which will provide enough capital. Many cooperatives handicap themselves at the start by inadequate financing.

But no matter how soundly it is financed, nor how well it is equipped, nor how advantageously it is located, good management, Mr. Stitt says, is necessary, if the creamery is to be a success. Amont other things, good management means a skillful and competent creamery operator backed by directors who keep themselves thoroughly informed about the workings of the organizations.

With good management an adequately financed and economically equipped creamery with a big enough volume of cream is well started toward success in the butter-making business.

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ANNOUNCEMENT: Our Farm reporter at Washington has just reported to us his interview with Mr. Tom G. Stitts, of the Cooperative Division of the Federal Farm Board. This time next week this Station____will again bring you a report from specialists connected with the Federal Farm Board.

UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

OFFICE OF INFORMATION

YOUR FARM REPORTER AT WASHINGTON Friday, November 15, 1929

NOT FOR PUBLICATION

Speaking Time: 9 minutes

Dairy Interview No. 9: RECENT SIGNIFICANT TRENDS IN DAIRY PRODUCTION

ANNOUNCEMENT: During recent years dairying has developed rapidly in a number of regions where it had previously received little attention. In metropolitan areas production of market milk has gained increasing importance. Great improvements have been made in transportation and refrigeration. Such changes have undoubtedly altered, and are still altering, the complexion of our dairy industry. So this week we asked YOUR FARM REPORTER to find out for us just what has been happening. He's going to tell us now what he's learned. Let's go, Mr. Reporter.

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The Bureau of Agricultural Economics keeps close track of what is happening in all agricultural enterprises. To keep up to date on dairying they get statistics from nearly 12 thousand dairy manufacturing plants in every part of the country. And then they issue reports based on these figures, for the benefit of everyone interested in the industry.

I took my question to Mr. L. M. Davis, of the division of dairy and poultry products in the Bureau of Agricultural Economics. He is the expert on the dairy situation.

"I want to get a picture for my radio friends," I told him, "of the recent shifts in the nation's dairy map. And how these shifts are affecting dairy farmers and dairy markets."

Mr. Davis began by pointing out an important shift that we're all familiar with--the development of fluid milk production. These fluid milk areas, of course, supplying large urban centers of population, have been expanding for many years. Certain eastern states that formerly led in production of manufactured dairy products, are dropping down on the list. They still rank high as dairy states, but their heavy milk production has been going more and more to satisfy the city demand for milk and cream.

Such a change, though, has been a normal development in the eastern and New England states. It was more or less to be expected. However, when some of the middle western states begin to show the same sort of trend--well, that's a condition that bears looking into more thoroughly. And that's exactly what has been happening.

Take the case of Wisconsin, and cheese production. For many years the great bulk of our cheese was manufactured there. In 1926 the Badger state produced 71 per cent of all the cheese manufactured in the United States. It

still tops all other states, but last year it's percentage of the country's total had dropped to 62 per cent. And at the same time, total cheese production in the United States increased. In fact, the 1928 production was the heaviest on record.

"The answer to that," Mr. Davis explained, "is that some other states have gone into the cheese business on a larger scale. And here's another significant fact. For the most part cheese-making in these states is a new enterprise, particularly in the South and in states bordering the South. And it's in this section that the most notable increases have occurred.

"For instance, our 1928 report shows production of cheese in Arkansas, Georgia, Kentucky, Mississippi, and Texas, where previously cheese production, if any at all, has been of no importance. Two outstanding examples are Mississippi and Texas. Mississippi production in 1928 was 2-1/3 million pounds as compared with 15,000 pounds in 1927. And production in Texas was close to a million pounds as against none at all the year before.

"Other states farther north have also contributed to the increase. Indiana gained from less than three-fourths of a million pounds to nearly five million pounds. Kansas production was 10 times greater in 1928 than in 1927, Missouri's five times greater. Idaho and Montana are other states showing substantial gains."

Now, all this gives us an idea of what's happening. But what does it mean?

Well, Mr. Davis answers, We'll have to await future developments to get the answer to that question. It isn't possible yet to determine just how much this new cheese territory can be depended upon to take up the slack if Wisconsin continues to swing further toward other dairy products. The southern states, for example, have some problems to solve. The main ones seem to be obtaining adequate milk supplies and producing a quality cheese that will equal the Wisconsin product. The solution of these problems, together with that of competing with other farm enterprises, will determine to a large extent whether a permanent cheese industry can be built up in the South.

Now, why, in the first place, have Wisconsin farmers been shifting away from cheese production? Mr. Davis points out two important influences. First, the increasing demand for fluid milk for Chicago and Wisconsin cities. Second, the new outlet for sweet cream, made possible by better rail transportation facilities and improved methods of handling.

Why is Chicago taking more Wisconsin milk than formerly? It has come about largely, Mr. Davis explains, because of enforcement of certain new requirements by the Chicago Health Department during the last few years. Wisconsin dairymen were able to adjust their production to meet the sanitary and health requirements enforced by the Health Department, of which the tuberculin test was one. Another factor, of course, was good roads. Motor truck transportation is an important factor in handling Chicago's daily milk supply.

As to sweet cream, Mr. Davis pointed out, as I've mentioned, that the new outlet is a result of improved handling and transportation facilities. Wisconsin farmers are now shipping large quantities to the east. During the

first eight months of 1929 approximately 85,000 cans of 10 gallons each, were received at New York and Philadelphia alone. This is equivalent to 425 carloads and it represented approximately 2-3/4 millions pounds of butterfat.

Now, had the milk represented by this butterfat been made into cheese, it would have amounted to over 7 million pounds. So we can see that the new sweet cream markets are an important factor in reducing Wisconsin's cheese production.

The business seems to be growing, too. According to figures from the New York market receipts of sweet cream were almost three times as heavy during the first eight months of 1929 as during the same period last year.

You're thinking, I suppose, that these same developments might affect butter production too. They have, together, with gains in production of condensed and evaporated milk. Back in 1920 about 11 per cent of our total domestic butter supply came from Widconsin. In 1928 the percentage had dropped to 9.2 per cent. To emphasize the trend in Wisconsin toward fluid milk and cream Mr. Davis pointed out that in Iowa butter production increased from 10 per cent of the total United States supply in 1920 to 13 per cent in 1928. And in Minnesota from 14 per cent to 18 per cent.

These changes, of course, aren't the only ones that are taking place. In the Pacific coast states, butter production has been slipping during recent years to meet the increasing demand for whole milk and sweet cream. That means, of course, that more butter has to be shipped in from other regions.

These shifts, you see, have a very important bearing on the dairy markets of the various dairy sections. The decrease of cheese production in Wisconsin offers other regions a chance to produce more cheese. And the reduction in buttermaking out on the Pacific coast provides a market for butter from dairy manufacturers in other states.

Mr. Davis mentioned that if production statistics could be compiled and published at frequent intervals, producers and manufacturers might be better able to keep their plans and their production adjusted to market demands. And he told me that plans were already under way for enlarging the present service along these lines. There has been so much demand for timely information regarding Pacific coast production that the Bureau of Agricultural Economics is to establish a weekly report in that region.

Well, my time is up. I haven't any bulletins to recommend today. But if you have any questions, fire them in. I'll see that they get expert attention.

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ANNOUNCEMENT: YOUR FARM REPORTER has just told you about some recent significant shifts in dairy production, as explained to him by Mr. L. M. Davis of the Department of Agriculture. This concludes his ninth week on the air over Station_____. He'll be back Monday to talk to you about .....

UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

OFFICE OF INFORMATION

YOUR FARM REPORTER AT WASHINGTON Monday, November 8, 1929.

NOT FOR PUBLICATION

Speaking Time: 9 Minutes.

PLANTS POISONOUS TO LIVESTOCK

OPENING ANNOUNCEMENT: Last Monday your Farm Reporter talked about livestock superstitions. This time he is going to talk about plants poisonous to livestock. Certain poisonous plants kill thousands of animals every year. Some of these plants are mentioned in this talk. All right, Mr. Reporter, here's the 'mike'.

---ooOoo---

Folks, I'm going to talk to you today about poisonous plants. It is estimated that three per cent of all our livestock are killed every year by eating such plants. This is a tremendous economic loss. These various poisonous plants scattered over the country cause losses in nearly every section. This is of vital importance to every person interested in protecting life and property.

In addition to killing livestock, some of these poisonous plants affect members of our families. This is surely sufficient cause for every individual to acquaint himself with the plant-poison situation. The United States Department of Agriculture has spent years in scientific research relative to these poisonous plants, and there are now free publications on the most deadly and most dangerous of these plants. Get your pencil and paper ready now to take down the poison plant bulletin numbers at the end of this talk.

One of our radio listeners down in the Carolina mountains lost a cow, the cow's calf, and got sick himself from drinking the cow's milk and all because the cow had eaten a certain poisonous plant common to that section. The sickness was diagnosed as milk sickness or TREMBLES and in that section probably resulted from the eating of white snakeroot. Ohio, Indiana, and Illinois suffer from that same plant poisoning. In Arizona, New Mexico and western Texas they have the same trouble, but in this section the disease is caused by the eating of rayless goldenrod. Violent trembles result from poisoning by either of these plants. The disease affects cattle, horses, sheep, swine and man. Farmers' Bulletin No. 1593-F, carries a most interesting and readable story of this peculiar poisonous plant. That bulletin is free for the asking.

In order to get still additional information on this plant poisoning subject I went over and had a talk with Dr. C. D. Marsh in charge of investigations of stock-poisoning plants for Uncle Sam's Department of Agriculture.

Dr. Marsh has been connected with this work for 25 years and relates most interesting stories of poisonous plants.

We had not discussed the poisonous plant situation very long until I realized that the losses were much greater than I had ever dreamed. Fishing for specific information, I asked Dr. Marsh if livestock liked these poisonous plants.

"No," was his candid reply. "On the contrary, most of the poisonous plants are distasteful to livestock. They eat them only when forced to it by lack of other feed and forage. For example, that is true of poisoning by mountain laurel, and sheep laurel, and buckeye. Animals may graze where these plants are abundant week after week and year after year with no harm, so long as grasses and other food forage are present; but, in poor pasturage, they eat anything they can get, including those which are poisonous. The scriptural injunction "feed my sheep," with the emphasis on FEED, can well be remembered by the farmer and stock raiser. As a general rule animals eat poisonous plants because they have to, and not because they like the taste of the plants. There are a very few exceptions to this but it is certainly the general rule, and the livestock receiving plenty of feed, forage and pasture usually suffer little from plant poisoning."

I next asked Dr. Marsh what section of the country suffered the heaviest livestock loss from plant poisoning.

"The range area," he replied. "This is due to the fact that it is not so practical to control weeds and plants over large range areas as in cultivated fields. Much of this range country is too rough to cultivate, and is fit only for grazing purposes. Controlling poisonous plants in this territory is a hard job. The larkspurs and loco weeds are found in the Great Plains grazing area, and across to the Pacific Coast. Losses from these plants are heavy. Cocklebur poisoning takes a heavy swine toll throughout the Ohio Valley. This plant even poisons cattle and sheep, and livestock losses have occurred from this source both east and west of the Mississippi River. The plant is most poisonous when very young and tender. Down in the South we have poisoning from white snakeroot, buckeye, and some cocklebur. Widely distributed through the Northern States is the water hemlock, the most poisonous of our plants. It not only poisons animals but every year many deaths are recorded of children eating water hemlock. Parents should teach children how to recognize and avoid the poisonous plants in their respective sections."

By the way, most of your radio listeners are familiar with poison ivy. It doesn't poison livestock, but you know what it does for people. There is a brand new Farmers' Bulletin No. 1166-F, on "POISON IVY AND POISON SUMAC AND THEIR ERADICATION."

"What poisonous plant kills most livestock?" I asked the poison plant investigator.

"Locoweeds," was his quick reply. "You asked me what plant, and you noticed I answered you by saying weeds. There are a half dozen of these locoweeds and they are all poisonous. Horses, cattle and sheep are poisoned by eating the locoweeds."

Continuing the discussion Dr. Marsh said, "Larkspurs probably kill more cattle than any other poisonous plant except the locoweeds. These plants are found in the mountains and mountain sections. They are most dangerous when young."

What is the most poisonous of all those plants? I inquired.

"Water hemlock," the doctor said. It is sometimes called "wild parsnip." The root is the poisonous part, and that being generally under the ground keeps down the loss from this plant. This is a strong poison and a little of it goes a long way. Curiosity leads children to taste and eat of these roots oftentimes before they know or even realize what they are. Children should be warned not to eat the roots of wild plants. A prompt emetic may save the child's life. That is well to remeber in water hemlock sections."

"Some of these plants," continued Dr. Marsh are very beautiful, and seem to invite animals and people to come closer and investigate. One of the most beautiful of the wild plants in the eastern United States is the "mountain laurel". Some sections call it the "calico bush." Down in the Southern States it is quite commonly spoken of as "ivy". It is now thought that any of the so-called laurels ------ rhododendrons, kalmias, azaleas and others are more or less dangerous to animals. This does not mean that when an animal eats a few leaves from a poisonous plant it will become sick and die. But when other feeds are scarce, the animal may eat enough to produce fatal results."

I could have listened to Dr. Marsh all the afternoon as he told me about the many poisonous plants.

In conclusion he impressed me with the fact that much livestock poisoning is due to faulty pastures, scanty feed, and neglect in allowing animals to graze places heavily infested with known poisonous plants.

Now get your paper and pencil and I'll give you the publications containing information about these poisonous plants. Unfortunately, we are not as well informed on these plants as we should be. Now is the time to get and study these bulletins so you'll know, and not have to guess. Farmers' Bulletin No. 1054-F, "THE LOCOWEED DISEASE." FARMERS' Bulletin No. 1593-F, "TREMBLES." Farmers Bulletin No. 1166-F, "POISON IVY AND POISON SUMAC AND THEIR ERADICATION." Department Circular No. 283-C, "LIVESTOCK POISONING BY COCKLEBUR."

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CLOSING ANNOUNCEMENT: You have just heard your Farm Reporter tell about plants poisonous to livestock. This program comes to you through the cooperation of the United States Department of Agriculture and Station_____.

UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

OFFICE OF INFORMATION

YOUR FARM REPORTER AT WASHINGTON Tuesday, November 19, 1929

NOT FOR PUBLICATION

Crops and Soils Interview No. 10: Changes and Needs in Hay Production

ANNOUNCEMENT: Your Farm Reporter at Washington was asked to inquire about the changes and needs in hay production. He called at the hay division of the United States Department of Agriculture. Now he is ready to report to you what he found out there.-------- All ready, Mr. Reporter-----

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Speaking of changes, I guess most farmers realize we've had 'em in the hay business. But maybe you don't appreciate how widespread they have been. I didn't, until Mr. Edward C. Parker, of the Hay, Feed and Seed Division of the United States Department of Agriculture outlined them to me. He took his text from Timothy.

As you no doubt remember, timothy used to be the outstanding hay of the country. In the last fifteen to twenty years however, there have been some swift and sweeping changes. Timothy growing has dropped off. The demand has shifted from grass hays to legume hays both north and south. There has been a big increase in hay acreage in the South. But in the older timothy regions of the North, many farmers on the poorer timothy lands have continued to grow timothy at a loss.

Timothy will probably continue to pay on the better timothy lands, but Mr. Parker pointed out that there is still a need to convert the least profitable timothy and grass hay acreage into pasture or legumes, especially in dairy regions. Alfalfa and soybeans will play a much more important part than timothy in the future.

That doesn't mean there should be a general increase in alfalfa hay production in the regions west of the Mississippi, but that legume hay acreage might be increased in the dairy regions of the east and south. Alfalfa growing in the West may expand gradually as the number of livestock increases with the growing population.

Why timothy growing has gone down and legume raising has gone up is easy to see, after Mr. Parker explained the reasons. The two chief causes are the use of the automobile and the increase of milk consumption.

Timothy was the most popular and the chief hay crop in the North; and it would have been in the South if it had done better in a warm climate. Anyway, there was a good demand for it in the South.

Its popularity was well deserved. According to Mr. Parker, it thrived in a wider variety of soils and climates than any other hay plant. It produced plenty of pure seed at low cost. It made a smooth even sod and kept down weeds. It had value as pasture as well as for hay. You could harvest it after the corn was laid by. And, last but not least, it was a satisfactory feed for mules and horses.

In those days, city hauling and trucking was largely done by horses and timothy hay was the chief fuel. It was so popular, thousands of farmers, especially in New York, Pennsylvania, Virginia, Ohio, Indiana, Illinois, and Michigan sowed a big acreage to straight timothy as a cash crop.

Then came the automobile. Motors replaced horses in the cities so that the demand for that prime horse-feed, timothy hay declined.

About the same time, also, dairy farmers began weeding out low yielding cows through their testing associations. Experience in feeding legume hays demonstrated that bigger yields of milk went with their use than when pure timothy hay was fed.

Both alfalfa and clover are better roughages than grass hays such as timothy because they contain in addition to crude fiber more digestible protein and lime. The use of a legume hay lowers the cost of a well balanced ration for dairy cows. That is the one reason, Mr. Parker explained that he suggested changing to alfalfa or clover in dairy sections where timothy is still fed to a considerable extent.

"But suppose alfalfa or clover won't grow well on the land?" I asked.

"In that case," Mr. Parker said, "dairymen in certain sections might find it would pay to pasture the poorest timothy or other grass fields and buy high-grade alfalfa or clover hay.

"However, in some sections," he continued, "there are soil areas which can be made suitable for alfalfa or clover by an investment in lime and phosphates. Where conditions are favorable for alfalfa it gives better results than clover because of its high yield to the acre, its higher nutritive value, and because the stands do not have to be renewed so often.

"However, wide variations exist in the feed value of all kinds of hay. A lot depends on the time of cutting, and the way the hay is handled, and the weather, and the way the hay is stored, and the purity of the hay. Much of the feed value of both clover and alfalfa is in the leaves, so the amount of leafiness is very important."

He went on to say that Farmers' Bulletin No. 1539 on "High-Grade Alfalfa Hay" will give you a lot of information on how to produce alfalfa as well as how to bale and load it for market.

For thirty years or more the south has been a heavy buyer of Northern-grown hay, especially timothy. In recent years, however, the plan has been to make the south a self-supporting region, as to forage crops.

The Cotton Belt still buys thousands of carloads of timothy or of timothy and clover mixed hay from Ohio, Indiana, Illinois, Michigan, Missouri and New York. But that timothy trade is gradually going down with increased production of soybeans, Johnson grass, Lespedeza and other hays.

Timothy and timothy mixed hay will continue to be an important and staple hay crop in the United States, however, Mr. Parker predicted. We have some farm regions where soil or climate or both are unfavorable to legume hays and favorable to timothy. In all such regions, timothy will still be grown as an important forage for farm horses, and to some extent, for cattle. Timothy may be grown even more in the South than at present. It doesn't make a successful hay crop in the southern states, but when sown in the fall it makes a good quick growth to protect the land from washing. It is the cheapest crop for that purpose.

However, in the older timothy growing regions, timothy is due for a further decline. The least needed and least productive meadows in our present overexpanded hay acreage, Mr. Parker emphasized, are the old timothy meadows in the East North Central and North Atlantic States and the prairie meadows in the North Central and South Central States. Some of these meadows, he declared, will surely be abandoned or converted into permanent pastures because the demand of the cities and the southern markets is not big enough to absorb all the surplus hay those lands can produce. High costs with competition from more productive meadows make the marginal timothy meadows no longer profitable to work.

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ANNOUNCEMENT: That bulletin on High-Grade Alfalfa Hay is Farmers' Bulletin No. 1539-F. You can get it free of charge either by writing to this Station_____ or by writing direct to the United States Department of Agriculture at Washington, D.C. Remember the number: Farmers' Bulletin No. 1539 on "High-Grade Alfalfa Hay."

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UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

OFFICE OF INFORMATION

YOUR FARM REPORTER AT WASHINGTON Wednesday, November 20, 1929

Not For Publication

Speaking Time: 10 Minutes

Poultry Interview No. 10: TURKEYS FOR THE HOLIDAY MARKETS

ANNOUNCEMENT: When the Pilgrim Fathers observed Thanksgiving it was a simple matter for everybody to have turkey. Turkeys were roaming wild in the woods. We aren't so fortunate nowadays. We have to raise them. And we've been raising fewer and fewer turkeys in recent years. Why? Well, YOUR FARM REPORTER has been talking this week with A. R. Lee, Department of Agriculture Animal Husbandman, and Mr. Lee has given him some interesting light on that question. Now, Mr. Reporter, let's hear it.

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Well, let's have a look at the figures. Thirty years ago, in 1900, the United States produced nearly twice as many turkeys as it does now. And at that time there were only about 2/3 as many people in the country as we now have.

On the surface that looks pretty bad, doesn't it? That is, if you're fond of Thanksgiving turkey. And who isn't? But the Thanksgiving season is no time for pessimism. I want to tell you something to be thankful for. Talking with Mr. Lee certainly made ME feel a lot better.

I couldn't believe that Americans were losing their appetites for turkey. And you wouldn't believe it, either. Then what is the reason for the decreasing turkey production? Mr. Lee says it lies on the supply rather than on the demand side. The trouble is that it has been extremely hard to raise turkeys profitably, because they are so susceptible to certain diseases.

For example, the effect of disease is shown clearly in the westward movement of the industry. New England was the cradle of turkey-raising in the United States. But under early methods of production, using the same land for a long period was found to be disastrous. Better results were obtained in a new environment on clean ground. So turkey production rapidly moved into the West. The industry in the East became relatively unimportant. And even out in the West disease has been a big problem.

However, a silver lining is now beginning to show up in the turkey-raising cloud. Science has been busy. And scientific workers have found ways to combat the diseases and parasites which have often made the business unprofitable.

Mr. Lee told me that the tide already seems to be turning. This year, for instance, estimates of the Bureau of Agricultural Economics indicate that

this year's turkey crop will be about 9 per cent larger than last year's, and other factors, too, point to a revival in the industry.

The renewed interest in turkey production, Mr. Lee believes, can be attributed to discovery and spread of information on turkey diseases. And the main thing that scientists have discovered is that turkey diseases can be controlled by cleanliness and sanitation.

Sanitation is really the key to successful poultry growing. Turkeys have to be protected from germs and parasites.

Take the case of blackhead infection, for instance. Blackhead is probably the main stumbling block facing turkey growers. Half grown flocks of thrifty young turkeys have been wiped out in a very short time by this disease, of which a blackening of the head is often the most noticeable symptom.

Here's one important point. Chickens are apparently little affected by the organism causing blackhead. They are known, however, to harbor the infection. And they are also carriers of the cecum worm, which has been shown to play an important part in the spread of the blackhead organisms.

The first step in your program of sanitation, then, is to separate the turkeys from chickens. They must not range on the same ground. And Mr. Lee adds that turkeys should not be allowed access to any land on which poultry manure has been spread.

As to keeping the turkey's living quarters sanitary, there aren't any hard and fast rules, Mr. Lee pointed out. Several plans have proved successful. Many turkeys are grown successfully in colony brooder houses, the houses being moved at frequent intervals to fresh land. Some farmers have a concrete yard in front of a long brooder house. This yard keeps the poults away from infected soil. And after 7 or 8 weeks they are removed to clean range, preferably on alfalfa or clover. Another good method is brooding young turkeys in sand or gravel yards which are kept sanitary by frequent cleaning and by replacement with fresh sand whenever necessary. Still another way is to install wire-bottomed yards of half-inch mesh through which droppings may fall.

All of these methods give good results, according to Mr. Lee. All have a common aim--to protect young turkeys from the cecum worm and the blackhead organism.

Coccidiosis, worm parasites and chicken pox also cause heavy losses in the turkey crop. And, as all of you know who raise poultry, sanitation is the main factor in controlling these troubles also.

Under the old methods of turkey-raising a loss of one-half to 2/3 of the turkey flock was by no means uncommon. Many farm women who have depended on income from turkeys for their Christmas shopping money have seen their expected savings wiped out in almost no time. But nowadays, with our new knowledge of how to combat to these diseases, this shouldn't happen very often, Mr. Lee said.

"Under the present improved methods, turkey-raising should be much less of a gamble than it used to be," he declared.

"We used to think" he went on, "that turkeys could be raised only where they had unlimited range. But many successful flocks today are being raised under semi-confinement."

"Another tendency is the increasing size of flocks. Turkeys are still most commonly raised in small flocks on general farms throughout the country. But, with artificial methods of hatching and rearing more generally used, large flocks are becoming more and more common."

Having in mind the turkey and stuffing that have been promised me a week from tomorrow, I asked Mr. Lee about fattening and dressing turkeys for market. I inquired praticularly about fattening birds in confinement.

He told me that turkeys raised in semi-confinement will fatten under confined conditions very well. But that those on free range should NOT be confined for fattening.

"Only turkeys which are in good flesh should be sold for Thanksgiving," he continued. "Quality in dressed turkeys affects the price very materially. Thin and immature birds can better be held for the Christmas and New Year's markets."

"Does it pay to dress turkeys for market?" I asked.

"Yes and No." he returned, "Unless dressed birds bring more than 10 cents a pound more than live birds it usually doesn't pay. But there ordinarily is a difference of from 10 to 15 cents in the price of live and dressed birds. Turkeys shrink about 10 per cent in killing and picking, you know.

"Many turkeys are sold alive nowadays. In the more thickly settled regions, though, they're usually dressed for market."

Now, my time is up. I have just one other suggestion. Mr. Lee, together with Dr. M.A. Jull, senior poultry husbandman of the Department of Agriculture, has prepared a bulletin which discusses the new methods of raising turkeys. The number is Farmers' Bulletin 1409. I'll be glad to get you a copy.

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ANNOUNCEMENT: If you want a copy of that bulletin write to YOUR FARM REPORTER at Station_____ or at the Department of Agriculture in Washington. The number, again, is Farmers' Bulletin 1409, and the title is "Turkey Raising."

UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

YOUR FARM REPORTER AT WASHINGTON Thursday, November 21, 1929

(For Region 1, Northeast)

Cooperative Interview No. 10a: The Problems of the Eastern Milk Co-ops.

ANNOUNCEMENT: Thursday of each week your Farm Reporter at Washington reports to us his talks with specialists of the cooperative decision of the Federal Farm Board. Three weeks ago, you may remember, he told us what the experts said about the fluid milk marketing associations. One of the main things he mentioned was the surplus problem. We asked him to go into that a little further and ask about the surplus milk problem especially with reference to our Eastern States. ------ All right, Mr. Reporter ------

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I gather from talking to Mr. Hutzel Metzger, of the cooperative division of the Federal Farm Board, that milk associations in the eastern milk sheds have several problems of their own.

Cream, for instance, produces one of the problems. The cream supply of the eastern States is not big enough. It is easy enough to separate cream from milk in the dairy, but the influence of cream on the eastern milk markets is a little more difficult proposition.

More and more our dairies have gone in for the production of fluid milk. That's natural. The demand for fluid milk in our cities has grown bigger and bigger. We get the best prices for milk in the form of fluid milk. But along with the increased demand for milk there has been an increase in the demand for cream, for ice cream and other purposes. That has had to be supplied from outside.

With better transportation and refrigeration, cream from Minnesota and other western points arrives in the East in almost as good condition as our cream here.

That shipping in of cream from the outside, however, tends to make the cream produced here sell at lower prices.

With most milk associations the big problem is the surplus milk problem; but here in the East, in some milk sheds, Mr. Metzger pointed out, the big problem is not a surplus but a shortage problem. Of course, conditions are more favorable for milk production in summer than winter. There is enough milk in the flush season, but there is a shortage in the fall in the New York market, for instance.

"What can we do about it," I asked.

"There is just one of two answers to that," Mr. Metzger said. "Either the dairymen will have to increase fall production or the milk shed will be

widened.

In Baltimore and Philadelphia cooperative milk associations regulate production according to a plan by which the producer is penalized if he produces more than a certain agreed amount. But there is no penalty if the dairy produces less than the amount. The Connecticut Milk Producers Association, however, operates under a plan by which the dairyman agrees to deliver a certain quantity and is penalized two cents a quart for all over that amount he produces or for all under that amount.

However, Mr. Metzger said that the operation of any plan to control production in order to bring about an even supply of milk throughout the year is likely to fail unless it is general over the larger part or the actual or potential fluid milk supply.

Besides a better control of the supply, he also pointed out that associations in this region as in other regions can strengthen their bargaining power, by building up substantial reserves for taking care of emergencies.

Most of the cooperatives merely sell to dealers and do not distribute milk. Even so, as Mr. Metzger suggested, many of the producers' problems are problems of distribution and retail selling.

For instance, the selling of milk by chain stores has at times had a tendency to lower the prices the producers get for their milk. Sometimes, these chain stores sell milk at cost or actually at a loss, in order to attract trade for other goods.

Such uneven retail prices demoralize the retail trade and bring cut-throat competition. That competition extends not only to the retail trade in milk but to the jobbers and wholesale dealers. That discourages milk production. Milk production falls off and prices go up again. In the end both the milk consumer and milk producer are damaged by such price upsets.

In some of the New England cities, besides creating a temporary upset in prices, the chain stores had one good effect. In taking away business from the wagons, it forced retail dealers into more economical, business-like methods. Naturally, most people want their milk delivered regularly and on time, so the wagons kept a good part of their business. But even so, chain store price cutting has an upsetting effect on the milk business. The best way to handle that situation Mr. Metzger said is for the cooperatives and dealers to get together and persuade the chain stores to maintain fair milk prices.

Another problem is that created by too many small milk and cream receiving stations. In a study made in New England it was found that to run economically a country milk station it takes two hundred and twenty to two hundred and fifty 40-quart cans a day. With less than that costs run too high. Of course, the longer the haul, the more it costs to haul the milk to the station. But in spite of that, it might be well for some of the small stations now operating to reach out further to get a bigger volume of milk.

And from the cost standpoint, Mr. Metzger declared, there is no reason to have two plants near each other unless each has a big enough volume to insure lower hauling and handling cost than would result from a single plant with

a longer haul.

The solution of such problems as these, according to Mr. Metzger lies in the more effective organization of producers. That would make easier the consolidation of many upcountry milk and cream receiving stations and would help the entire milk business in this section of the country.

The big need, he said, is for coordination in production, assembling, converting, shipping, and city distribution. Effective cooperative organization, based on a firm foundation of ably managed country plants is needed, especially in New England. That will make possible the consolidation of many upcountry plants, while producer-consignee cooperation at terminal markets will effect savings in freight by creating facilities for receiving in car-lots or tank-lots rather than less-than-car-lot loads.

In addition, such a producer organization, will be in a position to adjust its output as to meet market needs for milk and milk products more accurately than at present. By making such adjustments, the cooperative organization will be able to get the best prices in a given market.

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ANNOUNCEMENT: Your farm reporter at Washington has just given us the results of his talk with Mr. Hutzel Metzger of the Cooperative division of the Federal Farm Board. Next week we will have another talk from the Federal Farm Board. That will be next Thursday, Thanksgiving. Don't forget to tune in for this next cooperation talk.

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UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

OFFICE OF INFORMATION

YOUR FARM REPORTER AT WASHINGTON — Thursday, November 21, 1929

Cooperative Interview No. 10b. — Cooperative Feeder Buying.

(Regions 2, 4 and 5)

ANNOUNCEMENT: Each Thursday your Farm Reporter at Washington reports to us his talks with specialists of the cooperative division of the Federal Farm Board. This week we asked him to look into this question of direct buying of feeder stock by cooperatives, and some of the other phases of the feeding business. ----------All right, Mr. Reporter? ----------

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Buying stocker and feeder cattle and sheep for the feed lot has been going through some changes these last few years. Mr. C. G. Randell of the Cooperative Marketing Division of the Federal Farm Board has been telling me about them--particularly about buying stock on the range for Corn Belt farmers through a cooperative organization.

Of course, you know, there's nothing like corn for finishing off feeder stock. Corn produces better quality meat than that from grass-fed stock. Ranchmen found out long ago that packers will only take a limited amount of their livestock until after it has passed through that great meat factory, the feed-lot. Corn Belt farmers also found out that they couldn't compete with range conditions in raising stock to feeder size. They found they had to depend on the ranchmen for their supply of feeders. But when it came to getting together, the farmers didn't know the ranchmen and the ranchmen didn't know the farmers. Being a long way off from each other, there sprang up this system of buying stocker and feeder animals at the terminal livestock markets.

Farmers were glad to come to the terminal markets and buy their feeder animals because they had a good selection. At first, the farmers could buy their stockers and feeders directly from the livestock commission men who receive the consignments of stock from the range. But as time went on farmers began to experience more difficulty in buying fresh cattle and lambs out of first hands and when they went to make their purchases they found that they had to buy their supplies from speculators on the market who had already bought the stock from the commission men. Furthermore, they experienced difficulty in competing with the speculator in bidding for the fresh stock in the commission men's hands.

While the speculator furnished a service on the markets in that he bought up odd lots of stockers and feeders and then graded them into more or less uniform lots, the trouble was that he had mixed stale animals, or animals which had been on the market several days and sometimes several

weeks, in with the fresh stock. Since the farmer was not always able to detect these stale animals in making his purchases from the speculators, he would frequently have losses on his purchases. After the cattle arrivedhome and were in his feedlot, sometimes one or more of them would take sick and die. This was particularly true of calves. Range calves are usually marketed around 350 to 400 pounds. They are taken off tender grass on the range and shipped into market where they are given a "fill" of prairie hay. Their digestive apparatus has not been accustomed to dry hay and in some cases, if they are held around the yards for some time, they go stale. They lose much of their vitality. The result is, when they are shipped out to the farmers' feed-lots they have been set back so that it takes them much longer to get on feed, and in some cases the farmers lose one or more, thus cutting down a good part of their anticipated profit before they even start to feed. Mr. Randell says that this is no indictment of the central livestock markets but it is a criticism of a marketing system which hinders farmers from buying fresh stock out of first hands on the market before it has a chance to be "filled" and "refilled" by speculators and before it has a chance to become stale. Mr. Randell stated further that he was talking from personal experience, as he had suffered losses on buying some feeders for his farm in Kansas. In one shipment six cattle developed stockyards fever within 48 hours after they were in the feed-lot, and in spite of the fact that they were promptly vaccinated, one died. Mr. Randell recalls other cases which have come to his attention where two to six head have been lost from one shipment. He went on to say that while most of the stockyard companies try to maintain the strictest sanitary conditions, yet due to the system of handling cattle practiced by the speculators, losses in some cases were inevitable.

Well, for the reasons just given and for others we might mention, such as savings in transportation and the opportunity to secure one brand of cattle to feed, farmers began to buy their stock and feeder animals directly from the range without having them go through a central market. A good many ranchmen also wanted to sell their stock at home, but doing that was not so simple as it sounded. Both ranchmen and feeders soon realized that they could best get together through a third party. Naturally, they turned to their cooperative organizations. Four years ago the first cooperative feeder company was formed. In the actual operation of this cooperative organization, contracts are made with the ranchmen to deliver at a specified time a certain number of calves, yearlings or steers two years old or older, of a given quality at a fixed price. The feeder company acts as the farmers' agent in buying the cattle of the given grade and shipping them at a specified time. Some stockmen stated the highest price they would pay, and others gave a range of prices. But in all cases, there is an agreement as to the cost of the cattle to the feeders before the order is definitely accepted.

Orders are filled in rotation, and the cattle are cut directly from the herds at the roundup by the feeder company representatives. In case of long drives, the cattle are often taken to a trap or section of pasture near the loading pens and given a chance to rest over night before loading. Handled that way, they load out in better shape, especially the calves. They are billed to the feeder by the most direct route. As we said, that

cuts down shipping costs. It cuts out the terminal market expenses, and the animals usually reach the feed-lot in better condition. Then by taking part of the supply off the market which might go to packers, there is a tendency sometimes to improve market prices of the cattle at the terminal market.

Of course, there are also disadvantages in the direct movement. There is bigger shrink, and more chance for delay in transit, differences of opinion as to the quality and grade between the buyer and seller, and it is harder to get uniformity as to size and quality.

Cooperative buying on the range, however, permits buying in big lots and should make it possible to grade the cattle and get more uniform lots. The delay in transit is largely a railroad problem but most railroads will give special runs of shipments of ten cars or more to a given point in the Corn Belt. A special run means that the time in transit may be cut down a third to a half.

Ranchmen, as a rule, want to sell their stock on the head basis. The cooperative feeder company wants to buy on a hundredweight basis as this gives the most satisfaction all around and does away with guessing weights.

The success of buying stockers and feeders direct from the range will largely depend on whether Corn Belt feeders and ranchmen are willing to adopt a live and let-live policy. If ranchmen get their sights up too high on prices, the Corn Belt feeders will quit buying direct and let the stockers and feeders come in to the terminal market. The point is the feeder will not feed cattle indefinitely if he has to lay them in at such a high price that he can not make a profit on his feeding operation.

As Mr. Randell said, however, the grower will patronize the system of marketing that will return him the biggest net revenue, and the feeder the one that will permit him to lay in his stock at the lowest cost.

We have not said anything in this talk about financing feeders and how the farmers organizations are performing this service. That is a story in itself and we will take that up at another time.

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ANNOUNCEMENT: Your farm reporter at Washington has just given us the results of his talk with Mr. C. G. Randell of the cooperative marketing division of the Federal Farm Board. That will be next Thursday, Thanksgiving, so don't forget to tune in on it.

UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

OFFICE OF INFORMATION

YOUR FARM REPORTER AT WASHINGTON. REGION 3 Thursday, Nov. 21,1929.

NOT FOR PUBLICATION

Cooperation Interview No. 10: What's Ahead for Cotton Co-ops.

ANNOUNCEMENT: Each Thursday your Farm Reporter at Washington reports an interview with some of the cooperative specialists of the Federal Farm Board. This week we asked him to find out for us what is ahead for the cotton cooperatives.----Let's have the answer, Mr. Reporter--- What is ahead for the cotton co-ops?----------

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I gather from talking to Dr. James S. Hathcock, of the cooperative division of the Federal Farm Board, that some very significant changes have taken place recently in the cooperative marketing of cotton. But before trying to see which way those changes are leading us, let's see where we are now and how we got here.

As Dr. Hathcock explained, the present movement for the cooperative marketing of cotton began in 1921. We now have about fourteen centralized state-wide or regional associations selling cotton. In these associations the financing, and selling, and accounting, and classing and grading are centralized.

A loose form of field service has been used to keep contact with the members, to sign up new ones, and to assist in deliveries.------ And right there is one of the changes. ------ Recently, there has been a trend toward more permanent forms of membership relations and closer contact between members and the central organization.

At the beginning, the main purposes of the cooperatives were to market cotton in a business-like way; to avoid dumping too much cotton on the market in the fall and spread sales out more evenly through the year. Also to get full value for the cotton according to its grade and staple; and to make savings by selling direct to spinners and manufacturers. At first, the idea behind it all was to get enough cotton pledged to the association to enable it to control enough of the whole crop to effect prices. Members were signed up in iron-bound contracts to deliver their cotton to the association for five years.

But our cotton cooperatives never have marketed a very big percentage of the whole crop. From 4½ to 9 per cent is all they have had altogether. Today, all the cooperatives together market only about 7 per cent of the total crop.

Yet, as Dr. Hathcock pointed out, the very failure of our cooperatives to get a big percentage of the cotton signed up has resulted in several fundamental changes which have put cooperative cotton marketing on a much sounder basis.

The old iron-bound long-time membership contracts have been changed in favor of a short-time contract with optional pools giving the member the right to name the day on which the price of his cotton shall be fixed. Under the old pooling arrangements, all the cotton was marketed in a seasonal pool, and the entire responsibility for selling was up to the association management. With the daily pools now popular among cooperatives, the member shares the responsibility. This situation, Dr. Hathcock declared, is unquestionably causing the members to study marketing more carefully than ever before. It will result in better informed and more sympathetic members.

And not only are members coming to understand the problems of cotton cooperation better, but the leaders in the cooperatives are beginning to think in terms of closer contacts with members through setting up of local offices for dealing directly with them, supplying them with market information, and the like.

Some cooperatives have gone in for other services to their members. For example, some have gone into the business of buying fertilizer, and seeds, and Austrian peas for their members. They had their field men on the job, so the other services could be performed without added expense.

As Dr. Hathcock said, the changes have been fundamental. The whole philosophy of cotton marketing has changed. The emphasis is now put on services to the members. The idea of getting monopoly control of the crop has been largely abandoned.

As the behavior of prices has come to be better understood, the old idea that "dumping" caused the fall drop in prices has also been discarded. Under the daily price-fixing pools, the cooperative sells spot cotton wherever there is enough mill demand for it, but leaves the time of price fixation entirely in the hands of the individual members who are free to call their cotton when they wish.

At first the cooperatives were opposed to selling on buyers call; but they learned that they had to do it in order to sell direct to the mills. Now some associations sell all their cotton direct. Classing and grading services in the cooperatives have also been improved and the cotton being offered by the associations today, Dr. Hathcock estimated, probably comes nearer to being uniformly classed and stapled than at any other time in the history of the movement. All these things, he said, have a direct relation to satisfactory business dealings with the mills.

As to the future, Dr. Hathcock pointed out that the Federal Farm Board has asked the cotton cooperatives to get together and work out a unified sales agency. The idea is that cotton can be marketed much more effectively if the sales are concentrated in the hands of one or two men.

He also figures that the loans from the Federal Farm Board in the form of supplemental bank credits will enable the cooperative associations to advance more money on the cotton when it is delivered by the members and so induce more members to join the association.

Taken all in all, I gathered from what the Doctor said, that our cotton cooperatives are getting in a stronger position financially, in closer touch with their members, and on better terms with their customers. In fact, they seem to be headed toward a position in which they can offer greatly increased service to the cotton growers. And as we said before, more efficient service has become the watchword of cooperatives.

ANNOUNCEMENT: Your farm reporter at Washington has just given us the results of his talk with Dr. James S. Hathcock, of the cooperative division of the Federal Farm Board. Next week at this time we will have another talk from the Federal Farm Board. That will be next Thursday, Thanksgiving. Don't forget to tune in for the next cooperation talk.

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UNITED STATES DEPARTMENT OF AGRICULTURE
Radio Service
OFFICE OF INFORMATION

YOUR FARM REPORTER AT WASHINGTON Friday, November 22, 1929

NOT FOR PUBLICATION

Speaking Time: 10 minutes

Dairy Interview No. 10: BACTERIA AND MILK PRODUCTION

ANNOUNCEMENT: As older cities grow larger--as new cities develop--as market milk producing districts are widened--and as milk must be transported greater and greater distances, the need for improved methods of producing and handling milk is becoming more and more important. And to really understand the whys and wherefores of improved methods we have to go back to the causes of changes in milk--the minute organisms known as bacteria. So we asked YOUR FARM REPORTER to get us some information on bacteria, particularly as they are related to milk. He's here now with that information. Mr. Reporter.

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To learn about bacteria in milk I went to Dr. L. A. Rogers. Dr. Rogers is the man in charge of the Research Laboratories for the Bureau of Dairy Industry of the Department of Agriculture.

First, getting down to the most fundamental of fundamentals I asked Dr. Rogers: "What are bacteria, anyway?" He explained their nature something like this:

In the first place, the basis of all life is a mysterious jellylike substance that scientists have called protoplasm. In it's various forms it constitutes the actual living, changing part of every living thing, plant or animal. The simplest kinds of living things are merely shapeless, naked masses of this jelly.

Well, bacteria are one step above these forms. They show the first advance toward the plants with which we are familiar. In bacteria the protoplasm is covered and held in definite shape by a very thin and delicate wall. They are thus tiny one-celled plants. Plants growing in our gardens are made up of an infinite number of cells, organized like workers in a community--each kind doing a particular work---and all necessary to the complete plant. In bacteria each cell is a complete plant in i self.

Bacteria of course are so small that it is hard for us to form a conception of just how small they are. Only by considering a very large number can we think of them in familiar units of measure. It is estimated that if 25,000 average sized rod-shaped bacteria were placed end to end their combined length would equal one inch.

But what bacteria lack in size they make up in numbers, and in their powers of reproduction. A cubic centimeter of milk, which contains about 25 drops,

frequently contains thousands, sometimes millions, even hundreds of millions of bacteria. A single drop of sour milk may contain 40 million.

Dr. Rogers pointed out here that of course all bacteria are not actually harmful either to milk or to the human system. In fact, many kinds will grow in milk for a long time without changing it's taste or appearance. And many of the same bacteria that make milk undesirable are used in making butter and various kinds of cheese. Very few of the tiny organisms cause disease or produce poisonous by-products.

However, he emphasized this. In market milk all types of bacteria are undesirable. And the market milk producer has to take every possible precaution to keep his milk free from them. To comply with health requirements and to deliver to factories the highest grade of milk and cream constant effort is necessary to keep down the bacterial count.

Now here's another question. Where do all the bacteria come from? Dr. Rogers told me that very few bacteria are present in milk as it comes from the cow's udder. That is, if conditions are normal. The great bulk of bacteria in milk come from outside sources, or they are the result of multiplication of the few already there.

There are all sorts of opportunities for contamination after the milk has left the udder. In spite of careful milking, dirt, particles of dust, hairs, even bits of manure from the flanks or udder of the cow may fall into the milk. All of these things invariably carry some bacteria. Manure, of course, usually contains large numbers, many of them kinds which produce undesirable changes.

Contamination doesn't end here, though. Pails or cans may not be properly cleaned. The corners or seams may hold small particles of dirt or sour milk. These impurities are full of bacteria and they quickly find their way into the milk. And, if the strainer through which milk is passed has not been properly boiled, the bacteria are not all destroyed and they actually multiply in the damp strainer. Then, when the strainer is used again many of these bacteria are washed out by the milk.

Contamination from each individual source may be small. But taken all together it has a serious influence on the quality of milk. If extraordinary precautions are taken to prevent contamination the number of bacteria in fresh milk may be kept down to a few hundred per cubic centimeter. With ordinary careful milking it may easily be kept within a few thousand. But with careless milking and handling the number will very greatly, and it may exceed a hundred thousand.

It doesn't take long, you know, for a few bacteria to develop into a pretty large number. Bacteria reproduce by a very simple process. The cell becomes elongated and a partition wall is formed across the middle. The two cells thus formed separate, and we have two bacteria. Under favorable conditions bacteria may complete their growth and reproduce themselves in less than an hour.

Starting out, then, with only 100 bacteria, within 10 hours milk might contain in excess of a hundred thousand. Figure it out for yourself. That's how rapidly bacteria can develop.

Now we come down to the important question of what can be done about it. How

can this growth be stopped, or rather, slowed up to a negligible rate?

Well, we all know that temperature has a very decided relation to growth of bacteria. Dr. Rogers pointed out that most forms occurring in milk grow best at temperatures between 80 and 100 degrees. If milk is cooled to 50 degrees, or better still to 40 degrees, growth is checked at once and multiplication is very slow.

This isn't the only effect that cold temperatures have, however.. Temperature has a decided influence on the kinds of bacteria growing in milk as well as on numbers. Dr. Rogers explained that there is a constant struggle for existence among the various kinds. And so those which find conditions most favorable, or which succeed in changing the milk so that conditions are more favorable to them, than to other kinds, will gradually crowd the others out.

"For instance," he said, "if a sample of milk is divided into three parts and each part held at a different temperature--say, 35, 70, and 98 degrees--the bacteria predominating in each of these parts at the end of two or three days will probably be quite different.

"Thus, we see how it is that milk may undergo so many different changes. Even when milk is handled in the same way day after day there may be marked differences in it's appearance or flavor. Changes in conditions, so slight that they may escape our notice, may produce great variation in the final results. The amount and nature of bacterial contamination must necessarily vary more or less from day to day."

Actually, then, the whole matter of keeping milk clean boils down to a few simple, but very important steps. And Dr. Rogers points out that by observing these precautions clean milk can be produced with very little more effort than milk which is not clean.

The three important steps are: first, to keep cows clean; second, to sterilize utensils; and third, to cool milk promptly and keep it cold.

Or simplifying this formula still further Dr. Rogers puts it this way: Keep out the dirt and bacteria, and then keep milk at low temperatures. In those measures lie the secrets to increased markets, prevention of losses, and highest prices."

For further information in producing clean milk I suggest you write for Leaflet No. 3 of the Department of Agriculture, entitled "Improved Sanitation in Milk Production."

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ANNOUNCEMENT: You have been listening to YOUR FARM REPORTER tell of his interview with Dr L. A. Rogers of the Department of Agriculture, on the subject: "Bacteria and Milk Production." The publication he just mentioned was Leaflet No. 3, "Improved Sanitation in Milk Production." If you want a copy write to YOUR REPORTER at Station _____ or at the Department of Agriculture in Washington.

UNITED STATES DEPARTMENT OF AGRICULTURE
Radio Service
OFFICE OF INFORMATION

YOUR FARM REPORTER AT WASHINGTON

Monday, November 25,1929.

NOT FOR PUBLICATION

Speaking Time: 9 Minutes.

All Regions

PREVENTING HOG CHOLERA

OPENING ANNOUNCEMENT: Last Monday your Farm Reporter told you that three per cent of all livestock died annually from eating poisonous plants. Today he is going to tell you how hog raisers are plugging a $30,000,000 leak in the hog industry. His subject is HOG CHOLERA, and he is going back and give you a little educational history on how this disease has been brought under control by scientific research and untiring human effort. All right, Mr. Reporter, start your hog story.

--ooOoo--

Folks, I want to start this story by telling you that hog cholera has cost the hog raisers of this country as high as $65,000,000 in one year. That's a tremendous economic loss. I'm told by scientists that most of that loss is preventable.

You may wonder why I am discussing hog cholera at this time. I'll tell you. One of our radio listeners in the South wrote in and asked me to get some information on hog cholera and give it back by radio. It is a pleasure to comply with these requests, so I immediately went to prominent scientists in the United States Department of Agriculture in search of more information.

There is one man that I want all you hog raisers to meet and know. This man is Dr. M. Dorset. He found out what causes hog cholera and he found out how to prevent the disease and stop that big leak in the hog industry. Dr. Dorset is a native Tennessean but he has been working for your Uncle Sam since 1894 and practically all that time he has been, and is still, plugging away at hog cholera. He is also chief of the Biochemic Division of the Bureau of Animal and does a lot of other things, but up here we like to think of him as the man who found the way to prevent hog cholera, ------- thereby saving the farmers of this country literally millions of dollars every year.

Now come back with me for nearly a hundred years and we find our first outbreak of hog cholera in this country up in Ohio. That was in 1883. How did it get there? Nobody knows. Hog cholera is a disease that is known and found practically all over the world. There is no known medical treatment for the disease. There have been plenty of claims for cures by all sorts of remedies--so called--but according to the scientists these have never cured a case of genuine hog cholera. So under these conditions the disease raged in

this and other countries practically unabated for years. Some years the loss was much greater than others, but the disease was present in some sections all along. At first it was common in the Middle West and in the South, but later it spread to the West and East so that an outbreak of hog cholera was likely to bob up unexpectedly most anywhere. September, October and November were the months of greatest loss from cholera in most sections, but the mild climate of the South was favorable to an outbreak most any time. The disease does not appear to flourish at its best in extremely cold weather, nor in the hot sunshine.

There have been times in this country when the swine industry was greatly depressed by hog cholera. The first one of these periods was in 1887. The second came just ten years later or in 1897. And there was another in 1914. In 1896, 130 hogs out of every thousand died with cholera, but in 1924 only 30 out of every thousand died from the disease. What caused this drop? Wait, and I'll tell you.

In 1878 Congress appropriated money to investigate hog diseases. Hogs were dying all over the country. That was the first step in trying to find out what could be done to cure or control the cholera. The work has been going on ever since that date.

At one time it was thought that a germ caused the hog cholera. This information was broadcast to the world and all the leading nations accepted it as a scientific fact.

Working away in his laboratory in 1903 using the blood of a cholera-sick pig Dr. Dorset found that the disease is not caused by a germ. He used the finest filters which would strain out or hold back the minutest bacteria; he used the powerful microscopes known to science, and his filtered product was as clear as a crystal. It would stand for weeks and show no signs of growth of life.

Then came the test. This clear fluid was injected in a pig. What happened? The pig died of cholera. Thousands of these test were made and it was definitely proved that hog cholera is caused by a virus which is invisible, and known only by the effects it produces.

This information from your Uncle Sam's Department of Agriculture was checked and rechecked by the leading nations of the world, and accepted as a fact. The cause of hog cholera had been found. The next step was to find something that would combat the disease.

Dr. Dorset found that a hog that had once had genuine cholera and recovered, never had it again. He was given this virus blood from cholera hogs, and put in pens with cholera hogs, but he was immune. His blood was immune. In order to increase this natural immunity so that the blood would protect other pigs it was necessary to inject blood from a sick pig into the immune. Blood from an immune hog which had previously been treated that way was used to protect healthy pigs. These treated hogs did not take the disease, although a like number of exposed untreated hogs took the cholera and most of them died. Thousands of tests along this line proved that the blood from an

immune hog previously made hyperimmune by injections of hog cholera virus acted as a killer of the cholera virus from cholera hogs. That pointed to the solution of the problem.

As the treatment stands today a pig is injected with a small amount of virus prepared from a cholera-sick hog. At the same time he receives an injection of serum prepared from an immune hog, and the pig is made immune from cholera for the rest of its life. The amount of virus and serum the pig receives depends on its age and size.

I asked Dr. Dorset what would happen if a pig was given this virus without the serum. Quick as a flash he replied, "you would give the pig cholera and probably kill it." Again I questioned what would happen if the pig was given serum without the virus, and again his reply was quick and positive, "the pig would be immunized from cholera for from two to six weeks--- outside of that, nothing would happen."

I next asked if serum should ever be given alone. The doctor said "Yes, there are cases where it would be advisable to give the serum treatment only. Suppose a farmer has a pen of hogs he expects to kill or sell in say two weeks, and there is an outbreak of cholera on his place. There is no use to give virus when the hogs will be slaughtered in two weeks, so serum is given to prevent the disease for this short period."

According to the scientist hog cholera is a contact disease of the most contagious sort, and the only known preventive is by immunization with the virus and the serum. The cost is reasonable, and there is no special reason now why we should ever have another serious outbreak of hog cholera if the proper precautions are taken. There are enough reliable plants in the country manufacturing the virus and serum to insure an adequate supply of the fresh potent materials. A veterinarian is best equipped to administer these treatments, and it is generally advisable to consult one before spending money for the materials.

Why have I told you this story about hog cholera?

For this one big reason. The United States Department of Agriculture has reliable information on nearly any agricultural subject you may choose. It has other competent, well-trained men who, like Dr. Dorset, have done and are still doing, valuable work for stockmen and farmers. If you will make your wants known, no doubt you can find assistance. Dr. Dorset's contribution to the American farmer in showing him how to prevent hog cholera and help stop that enormous money loss has already been worth more than a half billion dollars in cold cash if we use the lowest figure of the $30,000,000 annual loss from this disease.

At some other date I am going to tell you more about how these serums and vaccines are being used by the man behind the plow to increase and insure his bank account.

--ooOoo--

CLOSING ANNOUNCEMENT: You have just heard your Farm Reporter tell the story of hog cholera. He asked me to say that Farmers' Bulletin No. 834-F, on "HOG CHOLERA" is free for the asking and will give still additional information on this subject. This program comes to you through the cooperation of the United States Department of Agriculture and Station_____.

UNITED STATES DEPARTMENT OF AGRICULTURE
Radio Service
OFFICE OF INFORMATION

YOUR FARM REPORTER AT WASHINGTON
(For Region 3 and South 4 and 5)

Tuesday, November 26, 1929

Crops and Soils Interview No. 11c: One Variety Cotton Community.

ANNOUNCEMENT: Our Farm Reporter at Washington has been to see a specialist in the United States Department of Agriculture about these one variety cotton communities we keep hearing about. He is now ready to tell us of the whys and wherefores of all the folks in the community growing the same kind of cotton.— All right, Mr. Reporter.

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The idea of growing just one variety of cotton in a community, which has proved so successful in the Southwest, is now spreading toward the old Cotton Belt of the South. Mr. J. A. Shanklin, the new specialist in cotton community work in the United States Department of Agriculture, tells me this one-variety plan is needed in all our cotton regions, if we expect to hold our place in the cotton markets of the world.

He says our cotton is not what it used to be. We need to improve it. To improve it, we need pure seed. To keep the seed pure, we need to grow some one good variety of cotton on all the farms in any one locality. Otherwise, we will keep on raising mongrel cotton by getting the seeds mixed at the gin and by getting the plants of one variety crossed with some other variety from a neighboring field.

That is just what happened when we used to think our cotton was "running out." Before the boll weevil wiped out Sea Island cotton growing in the South Atlantic States, our Sea Island cotton growers would get new seed every few year from the islands off the coast. Growers on the islands were able to keep their seed pure, because their Sea Island cotton fields were isolated. Their cotton didn't get mixed with other cottons.

On the mainland, however, the sea-island cotton growers couldn't keep their cotton from getting mixed with the shorter staple upland varieties. Their cotto didn't "run out," it just got mongrelized.

Now that's just what happens all over the cotton belt, Mr. Shanklin says. If an improved variety of longer staple cotton is grown near a field of shorter staple cotton, the plants soon get crossed. Instead of the improved variety you soon have a poorer mongrel variety.

Then there is a lot of seed mixing at the gin. In the old days of big plantations, with planters ginning their own, seed didn't get so much chance to get mixed as they do nowdays. But when the big plantations were broken up into smaller farms, custom ginning was started. With different varieties of cotton being handled by the same gin, there was a lot of mixing of seed.

That is the reason, as Mr. Shanklin explains it, that our cotton is not what it used to be. He credits Dr. O. F. Cook, of the Bureau of Plant Industry, with being the man in the government, who has most clearly seen that the only way to insure pure seed and better cotton is for each community to grow one variety. Dr. Cook, you know, discovered Acala cotton.

Acala is the variety selected by growers in the Coachella Valley of California. Now they have a law against growing any cotton but Acala in that region, to make sure of getting pure seed.

As a result, the cotton growers of the Coachella Valley get the higher prices paid for the more uniform staple they grow there. Then too, Mr. Shanklin says, producing one variety has created a community consciousness which has led to improved cultural practises and enabled the growers to produce bigger cotton crops at less cost.

But that is not the only community working together on the one-variety plan. Cotton farmers in the irrigated areas of Arizona grow only the Egyptian-Pima variety of cotton. Mill operators recognize that cotton for its quality and uniformity of staple and pay a premium for it.

That's the way this thing works. Local buyers soon recognize a community where they can get a big supply of cotton of uniform quality and staple. In other words, by growing one variety in a community, the farmers create a reputation for their community which has considerable money value when it comes time to market the cotton.

In Texas and Oklahoma, cotton growers have been improving the varieties of cotton they grow. Although they haven't yet confined themselves to growing only one variety of cotton in any certain community, they grow only a few varieties that are better than the general run of cotton found on local markets. The buyers have recognized its value and have paid premiums of several cents a pound on that cotton.

Of course, it is easier for the newer cotton countries to start a one-variety cotton community, but Mr. Shanklin points out, that the older regions will have to come to it, if they are to improve their cotton.

Some of you who grow cotton may have tried growing an improved variety, and couldn't do it because your neighbors didn't. Even when your cotton was better than the other fellow's, you couldn't sell it for a better price. Most of our growers grow cotton as just cotton. Prices are generally based on the average, and the grower of the poorer quality cotton pulls down the price on all the cotton in a community. That's not only not fair, but it has pulled down the quality of American cotton, generally.

There is no crop where the demand and use and price depends so much on grading as in the case of cotton. Yet efforts to grow the better grades and get the better prices are defeated by the mixing and mongrelizing of improved varieties because other and poorer varieties are grown in the same neighborhood.

The States and Federal government have experimented and explored and developed good varieties, but when growers get them under present conditions in the eastern Cotton Belt they don't stay good.

Mr. Shanklin suggests that all cotton farmers around any one gin should grow the same kind of cotton. In that way mixing of varieties at the gin can be prevented and crossing from near-by fields stopped and a pure seed supply insured.

Nor will the pure seed and the better prices be the only advantages. With the growing of one variety cotton in a community the boll weevils will be more easily controlled. All planting can be done at the same time, Under present conditions, the farmer who plants a late maturing variety of cotton gets the weevils from the earlier maturing varieties. And then the number of weevils going into hibernation could be more easily reduced to a minimum, because it would be easier for farmers to get together to destroy all cotton stalks early each fall.

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ANNOUNCEMENT: Your Farm Reporter at Washington has just given you the results of his interview with Mr. J. A. Shanklin of the United States Department of Agriculture on the subject of One Variety Cotton Communities. Further information on that subject can be had by writing either to this Station [illegible] or by writing to the United States Department of Agriculture at Washington. Ask for Farmers' Bulletin No. 1384-F on "Community Cotton Production". It is free.

UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

OFFICE OF INFORMATION

YOUR FARM REPORTER AT WASHINGTON
(For Region 1 and North 5).

Tuesday, November 26, 1929

Crops and Soils Interview No. 11b:: Progress in Blister Rust Control.

ANNOUNCEMENT: Your Farm Reporter at Washington has been asked to see about what progress has been made in the control of blister rust. That is highly important to people with white pines in particular, and to most of us in general. - - - Well, Mr. Reporter, you interviewed the specialists in the United States Department of Agriculture who handle blister rust control - - - What did you find out? - - -

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I gather from talking to Dr. J. F. Martin, Blister Rust Expert, of the Bureau of Plant Industry, that we have reason to be thankful. Anyway, we have made enough progress toward saving our half billion dollars' worth of white pine timber to encourage us to keep up the big fight still ahead.

Fortunately, Blister Rust is one of those queer diseases that have to spend a part of their lives on two different plants. In the case of blister rust, wild and cultivated currant and gooseberry bushes are the plants which spread this disease among the pines. Blister Rust does not spread from pine to pine, but spreads from white pines to gooseberry and currant, and from the currant and gooseberry back to the pine trees.

Well, that is one of those vicious circles alright; but knowing the particular kinds of plants needed to complete the circle, what we have to do to save the trees is, to get rid of all the currants and gooseberries near any white pines we desire to protect.

The European black currant, commonly called the cultivated black currant, is an important factor in the long-distance spread of the rust. It is more susceptible to Blister Rust than other currants and gooseberries. In fact, the cultivated black currant bush is so susceptible that it may pick up the disease from spores carried by the wind more than a hundred miles from the nearest diseased white pine. And after the rust has gone through its development on the black currants, it may spread back to white pines within a mile of the bushes, thus causing new centers of infection.

Ordinarily, however, Blister Rust spreads from other currants and gooseberries to white pines for only about nine hundred feet. This whole fight to control the white pine blister rust is, therefore, a matter of getting rid of all currants and gooseberries within nine hundred feet of valuable white pine, - and of getting rid of cultivated black currants entirely.

There are comparatively few European black currants in this country; they are not native plants and we won't miss them much if we lose them,

but it will increase the danger of our forests if we don't. The fight to clear the country of this dangerous outlaw and to banish all other currants and gooseberries from within and near valuable white pine areas has been going right ahead since the Federal government, in cooperation with the States concerned, started this campaign in 1922.

Dr. Martin tells me that there are over eight million two hundred thousand acres of white pine in New York and New England worth protecting, and that currants and gooseberries have been eradicated on over seven million acres. This means that we have considerably more than one million two hundred thousand acres of white pine in these states yet to be protected.

I say "considerably more" because that seven million acres from which the gooseberry and currant bushes have been eradicated includes the protective strips nine hundred feet wide around the edges of the white pine tracts. Anyway, we have made such good progress that it gives us courage to keep on.

And all the progress has not been in the campaign of getting rid of the bushes. Dr. Martin tells me that the scientists have been finding out more and more about the life history of the several different wild currants and gooseberries. They are studying such things as the effect of forest cover on the reproduction, growth and survival of currants and gooseberries, and determining whether white pine forests can be handled so as to let Nature help keep out these undesirable weeds.

Along this line he points out, that when the trees are cut off and the sunlight admitted, any small currant and gooseberry plants which are present begin to grow rapidly. These studies also indicate that the seeds of currants and gooseberries lie dormant under the litter of the forest floor maybe for years. Then when the white pine matures and is cut off, and the forest floor is stirred up by the lumbering operation, conditions become favorable for the seed to awaken to new life and start new bushes. This means that after currants and gooseberries have been apparently completely eradicated, they re-appear under favorable conditions and make necessary re-eradication.

According to Dr. Martin, however, the blister rust experts seem to be on the trail of facts which they hope will prove of value in the practical work of keeping these white pine blister rust-carrying weeds out of our white pine forests.

In the meanwhile, the Federal Government and the Northeastern states working together are removing the currants and gooseberries on over 800,000 acres a year. There are eight different species of white pine in this country, just one of which is in the East. The others are in the West. Two of the western species, the western white pine and the sugar pine, are highly valuable for commercial and forestry purposes. The other species at present are not used much for timber but their scenic and watershed value is of considerable importance.

Studies of old pine infection centers show that the Blister Rust disease has been in the East since 1898, while it is believed to have been introduced into the Pacific Northwest on a shipment of white pines from France about 1910.

And there is one of those queer relationships which sometimes spring up when new plants are grown in strange places! Our white pines are native American trees. Some of them were introduced into Europe years after the discovery of America. It appears that the white pines introduced into Europe caught the disease from other related pines in Asia. Anyway, trees native to America were taken to Europe and planted, and there took the Blister Rust. Young white pines raised in European nurseries were imported into this country before the enactment of quarantine laws regulating the entry of plants from foreign countries. Many of these trees were diseased and the rust spread to our native white pine forests. The disease is now present in the New England States, New York, New Jersey, Pennsylvania, Michigan, Wisconsin, Minnesota, Montana, Idaho, Washington and Oregon, and in the Provinces of British Columbia, Ontario, Quebec, Prince Edward Island, New Brunswick and Nova Scotia.

In time it will probably spread naturally all through the range of white pines on this continent. The main thing to bear in mind, however, is that the disease develops where white pines, currants and gooseberries occur together. Control can be accomplished by separating gooseberry and currant bushes from white pines.

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ANNOUNCEMENT: Your farm reporter at Washington has just reported progress in the campaign to save our half billion dollars' worth of white pine timber by eradication of currant and gooseberry bushes. He was giving the situation as outlined to him by Dr. J. F. Martin, pathologist, of the United States Department of Agriculture.

UNITED STATES DEPARTMENT OF AGRICULTURE
Radio Service
OFFICE OF INFORMATION

YOUR FARM REPORTER AT WASHINGTON: Tuesday, November 26, 1929
(Regions 2 and North 4)

Crops and Soils Interview No. 11a: Progress in Barberry Eradication.

ANNOUNCEMENT: We asked your Farm Reporter at Washington to find out what progress is being made in getting rid of those barberries which spread the black stem rust of small grains. Your Reporter interviewed specialists of the Bureau of Plant Industry of the United States Department of Agriculture, and is not ready to report -----All right, Mr. Reporter-----

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Of course, I don't have to remind you that the greatest single hazard of the small-grain crop in the thirteen important grain-growing States of the upper Mississippi Valley is black stem rust. Mr. L. D. Hutton, of the United States Department of Agriculture, who outlined for me the progress which has been made in the fight against stem rust, pointed out that losses due to black stem rust in single years have amounted to two hundred millions of bushels of small grains in these States alone.

As you know, stem rust can not start in the spring in these northern States without the help of the common barberry bushes. This relationship between the barberry and stem rust has been observed for many years. Farmers in Europe 250 years or more ago noticed that rust was always heaviest near barberry bushes. For a long time many scientists did not believe that barberries could spread rust. Now, they not only have found that barberries do spread rust, but also just how rust is spread, and how its spread can be controlled. The rust fungus goes through part of its development on the barberry bush. In these northern States unless the rust, which lives through the winter on the straw and stubble, goes back to the common barberry it can not grow again on the next year's crop.

One barberry bush in one season can produce more than sixty-four billions of rust spores. Each one of these spores may infect a grain or grass plant and produce two hundred thousand more rust spores. In favorable weather, the rust started that way will reproduce on the grain plants every 10 days and rust will spread like wild fire. The air will be filled with rust and the farmer's home will be filled with gloom. Obviously the best way to protect the new crop is to kill the kinds of barberries which spread the rust. Practical farmers were the ones to start this idea of getting rid of barberries to reduce the losses from stem rust of our wheat, oats, barley and rye. Many individual barberry bushes and hedges were destroyed by individuals but a concerted campaign was necessary to insure complete eradication.

The systematic campaign of the Federal government, in cooperation with the 13 North-Central and Mountain States, to eradicate the common barberry has been going on for more than ten years. It is a tremendous job. It seems an almost staggering job when you realize that there are well over one and three-quarters millions of farms, and many millions of city, town, and village properties in

these States which must be inspected for barberries. Much of that tremendous area must be surveyed carefully on foot. A large part of it must be gone over several times to make sure that all the barberry bushes have been destroyed. Just remember one bush may produce sixty-four billions of spores, each capable of starting a center of infection in some grain field. Every bush must be found and destroyed!

You see, before this campaign started hundreds of thousands of barberry bushes had been planted as ornamentals or hedge plants in lawns, orchards, and groves. Then the seeds of those bushes were spread by birds and in other ways to groves, orchards, and wooded pastures, fence rows, stream banks and irrigation ditches, and to dense timber and swampy land.

When you figure that an average size barberry bush will produce about 22,-000 seeds a year, it is not surprising that the inspectors have found thousands of barberries growing wild in practically every county in the eradication area except a few in the western States.

But I started out to tell you what has been done to find those bushes and kill them with salt or kerosene. The big task, of course, in fighting barberries is in locating the bushes. Mr. Hutton told me that in the 12 years of the campaign from April 1, 1918 to August 31, of this year, the farms in an area equal to about 900 counties have been covered by a first survey. Of the counties already covered by the first survey, about 262 have been surveyed a second time. The first survey of nearly all cities in the entire 13 States has been completed. These thirteen States mean business in their declaration of independence from the menace of black stem rust!

Taking all in all, nearly 18,000,000 planted barberry bushes, sprouting bushes, and escaped bushes have been destroyed in the survey made in the last twelve years. This year over 500,000 planted bushes, sprouting bushes, and escaped bushes were found and destroyed.

One of the most encouraging things about the campaign, however, Mr. Hutton pointed out, is the part the young folks and children have played in locating barberries. More than 250,000 barberry bushes have been reported by children who have studied in their schools the barberry and the rust it spreads.

And that is not the most encouraging feature of it. Not only are they helping to rid these States of barberry bushes, but they are learning to know that the barberry must be destroyed to protect the grain crops. It seems certain we will have plenty of well-trained campaigners to take over the work when those at present doing the fighting have gone. The Barberry Eradication Campaign has carried on an extensive educational program. Nearly every grade school in the area has been supplied with lesson plans, bulletins, and specimens. High schools have been supplied with teaching materials. Numerous Boys and Girls Clubs have also been taught how to recognize barberries and the importance of stamping them out if we are to save our grains from the black stem rust.

The Federal government alone has spent nearly three and a half millions of dollars in this work of just helping the States and their farmers to find and get rid of barberry bushes. As a result our wheat losses alone from black stem rust in these 13 States already have been reduced from an average of fifty million bushels a year to about sixteen million bushels a year, or less than a third of what they were. The campaign is not yet half completed, Mr. Hutton

said, but has already paid for itself many times over. There will be need to keep up the fight for many years to come. Many bushes still remain to be found and destroyed. Barberry seed will lie in the ground and these will germinate and produce bushes.

Every farmer in the infested district should have the bulletin "The Common Barberry and Black Stem Rust." This is Farmers' Bulletin No. 1544. It tells how to identify the common barberry and how this bush spreads rust to our grains.

ANNOUNCEMENT: That bulletin can be had by writing to this Station_____or by writing direct to the United States Department of Agriculture at Washington, D. C. Ask for Farmers' Bulletin No. 1544 on "The Common Barberry and Black Stem Rust."

UNITED STATES DEPARTMENT OF AGRICULTURE
Radio Service
OFFICE OF INFORMATION

YOUR FARM REPORTER AT WASHINGTON Wednesday November 27, 1929

NOT FOR PUBLICATION

Speaking Time: 10 minutes.

Poultry Interview No. 11: THE GREAT AMERICAN TURKEY

ANNOUNCEMENT: Here's a talk on The Great American Turkey. This being poultry day on YOUR FARM REPORTER'S program---and also the day before Thanksgiving--- Your Reporter is ready to give us some more facts about turkeys. Last week he got his turkey information from A. R. Lee, Department of Agriculture poultry husbandman. This time he went to poultry economists, over in the Bureau of Agricultural Economics. Now here he is. YOUR FARM REPORTER.

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The Great American Turkey.....A very fitting name, Mr. Announcer. The turkey, you know, is our only native domesticated animal. The only one that is strictly an American product--that is, distinctively 100 per cent American.

Mr. Rob Slocum, of the division of dairy and poultry products in the Bureau of Agricultural Economics, briefly sketched for me the turkey's background. Wild turkeys were originally native to North America from Canada to Mexico on the Atlantic coast. The Spanish conquerors of Mexico took large numbers back to Spain with them. They domesticated them, and later exported some to other European countries. American colonists, upon migrating to America, actually returned the turkey in domesticated form to it's native land. The native wild turkey, though, is supposed to have entered into the development of some of the younger breeds of domesticated turkeys.

The oldest variety of turkeys in America is thought to be the White Holland variety, developed in Europe about 1,000 years ago. The Narragansett breed was developed at Narragansett Bay, Rhode Island, in early colonial times. Another popular breed, the Bourbon Red, was developed in Bourbon county, Ky., about 40 years ago.

Of course, when the Pilgrim fathers first observed Thanksgiving, they relied on their trusty rifles. Wild turkeys were plentiful in the New England woods. But it wasn't long, of course, until the process of domestication was begun.

Have you ever eaten any wild turkey, by the way? There still are wild turkeys in the country. Mr. R. C. Potts, the man in charge of the division of Dairy and Poultry Products, told me that they exist in considerable numbers in a few isolated sections. There are some in Virginia, for instance,-- down in the wooded mountain country.

Wild turkey, you know is much sought after. It has eating qualities that

domesticated turkeys can't quite equal, delicious as they may be. The food wild turkeys eat in roaming around the woods gives a flavor to the flesh that is difficult to duplicate under domesticated conditions.

As Mr. Lee pointed out last week the turkey-raising map of the United States has changed radically since Colonial times. I asked Mr. Potts where most of our turkeys come from nowadays.

Pointing to a large wall map he explained that the middle west and the Southwest are the big production areas. The Northwest, however, has shown increased interest in turkey-growing during the last few years. And some turkeys are grown in practically every part of the country. Turkey-raising is an adaptable enterprise.

The census of 1920 showed the leading states in turkey production to be Texas, Missouri, Oklahoma, California, Kentucky, and Virginia. The situation may have changed considerably since that time! We're now getting trainload turkey shipments from Idaho, and carlots from such other western states as Oregon, Nevada and Colorado.

This year, in fact, with a total reported increase over last year's turkey crop of 9 per cent, the main increases have come in the eastern and southern states. This is an encouraging sign since it indicates that turkey-raising can stage a comeback in the east, where it really got its start. The swing to the west was due to the need of lots of room for turkeys under older production methods. With new methods, however, turkeys can now be raised successfully under semi-confined conditions.

The most recent report of the Bureau of Agricultural Economics on the turkey situation, says this: "The adoption of better methods of handling turkeys and the commercial hatching and sale of young poults seem to be extending quite generally in most of the important turkey states. A considerable part of the increased production this year can probably be ascribed to these developments."

These developments, Mr. Potts pointed out, are: brooding by artificial means; successful turkey-raising under semi-confined conditions; and the tendency toward commercial production; that is, towards large flocks. It used to be that 200 turkeys constituted a big flock. Now in some western states there are flocks of three or four thousand.

From an economic standpoint the new methods are particularly significant for three reasons. The mortality rate is much lower. More turkeys are raised per 100 eggs. And the birds are thriftier and better finished--they're kept growing all the time.

I asked Mr. Potts about the relative consumption of turkey at Thanksgiving and at Christmas. He told me that around one-half the crop is marketed at Thanksgiving. The remainder is shipped to market for Christmas, or shortly after Christmas.

"It's fortunate," he said, "that we have two feast days like Thanksgiving and Christmas. However, fresh-killed turkey put into cold storage makes good eating any time during the year. A large share of the poultry pack is placed in storage. And there's no reason why turkeys can't be cold-stored. In fact,

if it weren't for cold storage we wouldn't be able to have turkey on our tables or at hotel dinners.

The point, Mr. Potts declared, is that we're either going to have to eat more turkey at holiday feasts, or we're going to have to eat it more times during the year. The latter course seems preferable to ms personally. Now that turkey production is again on the up grade,----and now that we have cold storage perfected to a high degree--I'm all in favor of having turkey every once in a while. How about you?

Here's another interesting possibility. I asked him how people who live in small light housekeeping apartments could make use of turkey. That is, unless they get invited out or go to hotels. They probably WOULD have turkey if they could get a small one, or perhaps a half turkey. But an average-sized turk is too much for them to handle.

"Well," Mr. Potts replied, "that suggests that there might be a change in the retail practice of selling turkey. The retailers may have to meet the requirements of the small family. A turkey can be split down the back, you see, so that every cut and part can be obtained in each half. It's becoming a general custom in some cities already to sell Chickens that way. Either in halves or in pieces. The progressive retailer is cutting the poultry into the cuts and parts that his different customers want. The same can be done with turkey."

Well, when all of us can buy our favorite pieces of turkey--when we don't have to bother with an entire bird--when we can thus cook it ourselves no matter how small our apartment or house.....then, I think, we all <u>will</u> have something to be thankful for.

ANNOUNCEMENT: YOUR FARM REPORTER has just completed his day-before-Thanksgiving talk on The Great American Turkey. Remember, that if you have any questions to ask, or any requests, you can address him at Station___or at the Department of Agriculture in Washington.

UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

OFFICE OF INFORMATION

YOUR FARM REPORTER AT WASHINGTON — Thursday, November 28, 1929.

Cooperation Interview No. 11. — Chairman Legge, of the Federal Farm Board Sends a Message to American Farmers.

ANNOUNCEMENT: For our Thanksgiving program, we told your Farm Reporter at Washington to see Mr. Alexander Legge, chairman of the Federal Farm Board, and ask him for any message he has for the farmers of this country at this time. ------- All right, Mr. Reporter, what did Mr. Legge have to say?

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Well, as you might guess, Mr. Alexander Legge, chairman of the Federal Farm Board, is a pretty busy man these days. However, when he found I wanted a message for our Thanksgiving farm audience, he gladly agreed to give it to me. As he talked I took down what he said.

Now, here is what he told me to tell you:

"Since last Thanksgiving the federal government has taken the initial steps to give agriculture, as a class, greater recognition than ever before," Mr. Legge began. No other government has ever given such recognition and support as is being given the agricultural industry of the United States through the Agricultural Marketing Act passed by Congress last June, he said.

"The Federal Farm Board has been created to carry out the provisions of the act by building up a marketing system that will bring greater returns to farmers."

Then he went on to say, regardless of what measure of success the Federal Farm Board may have in trying to develop better conditions for agriculture, farmers of this country have a reason for feeling encouraged -- a definite milestone of progress has been reached in the passage of the act and the creation of the Board which is to aid in looking after the important business of marketing the products of the farm.

In developing the new plan to aid agriculture, the Board has the sympathetic cooperation of the United States Department of Agriculture, state agricultural colleges and experiment stations, county agents, federal and state extension forces, secretaries and commissioners of agriculture in the various states, and every one of the general farm organizations. With all these forces working together to a common end there should be no question that substantial progress in the solution of the American farmer's unsatisfactory conditions will be brought about.

The Federal Farm Board and the Federal Departments of Agriculture and Commerce are working together on a plan to enlarge the facilities of the Bureau of Agricultural Economics of the Department of Agriculture in order to obtain more complete information on consumptive demand and also the production of countries that compete with our products in the world's market places.

The personnel of the Federal Farm Board naturally will be changed as the years go by. It may be found necessary to change the act itself. But no matter what changes are brought about in either the personnel of the board or the law, official recognition of the farm problem has given a foundation for whatever action may be necessary to put agriculture on as favorable a basis as that of any other industry.

Farmers now have sufficient support to effectively help themselves. The progress to be made from now on depends largely upon the farmers' willingness and ability to work with their neighbors. Regardless of any other difficulty entering into the agricultural problem, the failure of farmers to work together to better their conditions has been one of the chief handicaps in the development of their industry.

Many farmers who have had experience in acting collectively in handling local problems know the value of cooperating with the neighbors in their own community. That same idea must be recognized in building up an effective system of marketing farm products which find their way into the consuming centers of this country and into the markets of the world where they must compete with the products of other countries.

The necessity of centralized action in marketing farm products has been recognized for many years but it takes time to develop the necessary machinery to bring it about. Many things had to be done before the wheel started turning. But the time has been reached when more definite steps can be taken to follow the farm products through the channels of trade. Through farmer-owned and controlled organizations, producers of agricultural porducts will have more to say in the future about the share they get of the consumer's dollar.

It is believed that fair returns can be given farmers without placing any greater burden on consumers.

Centralized cooperative commodity organizations are being set up under the guidance of the Federal Farm Board in livestock, wheat, wool and mohair, and cotton. Through these centralized marketing agencies the Board believes there will be secured a bargaining power for agriculture equal to that of any other interest.

To make this movement successful we must have and earnestly request the support and cooperation of farmers throughout the nation. Do not expect the new marketing system to change over night conditions which have grown up over a long period of years. These conditions are deeply rooted and are the outgrowth of a marketing system in which farmers have had little to say about the prices they were paid for their products. Don't get discouraged and withdraw from your organization because you cannot see bigger returns

coming in the day after you sign up with a cooperative.

I am confident that with patience, perseverance, and an earnest desire on the part of farmers to get together, and with the United States government's support given unstintingly to the cause, a marked improvement in the agricultural situation of this country can be obtained.

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ANNOUNCEMENT: You have just heard a message to American farmers from Chairman Alexander Legge, of the Federal Farm Board, as given to Your Farm Reporter at Washington and broadcast through Station ----------.

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UNITED STATES DEPARTMENT OF AGRICULTURE
Radio Service
OFFICE OF INFORMATION

YOUR FARM REPORTER AT WASHINGTON Friday, November 29, 1929

NOT FOR PUBLICATION

Speaking Time: 10 minutes.

Dairy Interview No. 11:

ANNOUNCEMENT: The Department of Agriculture has had field men working with creameries and dairy farmers for several years. Their purpose is to improve the quality of cream brought in from the farm. Better cream, you know, means better butter. So we asked YOUR FARM REPORTER, who represents Station ____ at the Department of Agriculture, to find out for us just what has been and what is being done. Mr. Reporter.

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To make high quality butter you've got to have high quality cream. There's no question about that. To get the high quality cream and to make the high quality butter--those are problems of the creameryman. But to produce the high quality cream in the first place--that is up to the individual farmer.

Producing high grade cream, as everyone knows, calls for careful sanitation, proper cooling and care, frequent delivery, and so forth. Is it worthwhile for the farmer to take these precautions? Of course there must be some incentive. And that is what the United States Department of Agriculture is interested in. The Department wants to see the creameries get better cream. And it also wants to see that farmers get an adeuqate return for producing this high grade cream.

The Department's ideas were explained to me by Mr. William White, senior dairy manufacturing specialist in the Bureau of Dairy Industry. Mr. White explained that the bureau's purpose is to improve the efficiency of creameries, to introduce better methods of creamery operation, and to help the creamery operate more profitably. All of this directly benefits the creamery. But it also benefits the farmer who sells to the creamery. It gives him a better market for his cream. And that is fundamental to profits in dairying--a good market.

Let's consider for a moment the problem of the creameryman. If he sets out to make only high quality butter he must have cream delivered fresh and sweet. That is the first essential. And of course in any such plan the cooperation of farmers is absolutely necessary. If the majority of farmers are wholeheartedly in favor of certain regulations, it isn't difficult for the creamery manager to enforce them.

If regulations regarding cream are enforced, however, what should be done with cream that doesn't meet the requirements? Some plants, Mr. White said, accept only sweet and clean-flavored cream. All other is refused. Other plants grade cream according to the quality of butter that can be made from it. A price

is fixed accordingly for each grade. That seems fair enough--that cream be graded and the price per pound butterfat determined according to its market value. Wheat, cotton, and most other farm produce are bought and sold on that basis nowadays.

Well, in most of the older dairy sections practically all of the creameries DO grade cream. The basis of grading varies, of course, Some plants won't take second grade cream at all. Others take it, but pay less for it.

At present the Bureau of Dairy Industry has field men in other sections--in sections where dairying is important but comparatively new. They're working largely along this line--encouraging creameries to buy on a grade basis and also encouraging a premium for high grade cream.

The usual differential on grades, of No. 1 over No. 2, is 3 cents per poumd butterfat. That pays well for the extra trouble and care involved. And in some creameries the differential is as high as 5 cents.

Mr. White told me about one cooperative creamery in Tennessee. In 1924. before a grading system was put into effect, only 10 per cent of the cream brought into this plant was first grade cream. The net price received for butter was 3 cents less than the Chicago market price on 90-score butter.

Last year, under the grading system, 75 per cent of the cream received was first grade. And the average net price received was 1/4 cent OVER the Chicago market price for 90-score butter.

So there's no question that buying on a grade basis will pay dividends to the creamery man. And the dairyman who produces high grade cream benefits correspondingly. Mr. White cited the following figures: Assuming a 3 cent differential between first and second grades, 10 cows will bring as much income to a farmer selling first-grade cream as 11 cows would if second-grade cream were sold.

Most of you have seen, and many of you have used, cream score cards. Generally, you know, cream for buttermaking is graded as to flavor, acidity, richness, and appearance. Flavor counts most. It is given 45 per cent of the total score of 100. Acidity counts 30 per cent. richness 15 per cent, and appearance 10 per cent.

Flavor, Mr. White explained to me, is scored by tasting the cream. And by judging it according to the quality of butter that can be made from it under ideal conditions.

Acidity is scored perfect when it is less than two-tenths of one per cent. For each 1 tenth of a per cent above this amount 2 points are deducted.

Richness is scored perfect when the butterfat test is 28 to 45 per cent. One point is deducted for each 1 per cent below 28 or above 45.

As to appearance deductions are made when the cream is lumpy, cheesy, foamy, or churned, or when the can is dirty and rusty.

On the score card printed by the Department of Agriculture are 10 points, under the heading: "How to Produce High Scoring Cream." I'll read them.

They give the essentials, in a nutshell.

Point No. 1--Produce clean milk. Clean the cows before milking and milk with clean, dry hands.

Two--Wash and sterilize cream separator and other utensils every time they are used. Do not use cans or utensils with rough or corroded surfaces.

Three--Provide a cream cooling tank convenient to water supply and protected from the heat of the sun. A wooden tank with a wooden cover is serviceable and cheap.

Four--Immediately after spearating, place the cream in the tank of cold water, preferably ice water. Stir it occasionally to hasten cooling.

Five--If ice is not used, change the water in the tank often enough to keep the cream cold. During warm weather frequent changes are necessary unless cold water flows through it continuously.

Six--Never add warm cream to cold cream. When adding one lot of cold cream to another, stir until the mixture is uniform and smooth.

Seven--Take cream to creamery before it sours. With proper care, three deliveries a week in warm weather are usually sufficient.

Eight--When taking cream to the creamery, cover the can in warm weather to protect it from the heat.

Nine--In cold weather cool the cream in the cooling tank the same as in warm weather.

Ten--Never let cream freeze.

Mr. White has written a number of bulletins on the subjects of butter-mak- and quality of cream. Here are two on home butter-making that some of you may be interested in. Farmers' Bulletin No. 876, "Making Butter on the Farm;" and Leaflet No. 9, "Making and Storing Farm Butter for Winter Use." Here's one intended mainly for creamerymen: Technical bulletin No. 159, on the subject, "Keeping Quality of Butter Made from Cream of Various Acidities." And finally, here's one for any person who is thinking of starting a creamery: Department Miscellaneous Publication No. 37, "Essentials for the Successful Operation of a Local Creamery."

ANNOUNCEMENT: YOUR FARM REPORTER has just closed another week on the air over Station_____, if you want any of these bulletins he mentioned today just drop him a line. Address him in care of Station____or at the Department of Agriculture in Washington. The bulletin numbers, again, are Farmers' Bulletin No. 876, "Making Butter on the Farm"; Leaflet No. 9, "Making and Storing Farm Butter for Winter Use"; Technical Bulletin No. 159, "Keeping Quality of Butter Made from Cream of Various Acidities"; and Miscellaneous Publication No. 37, "Essentials for the Successful Operation of a Local Creamery."